TYPES OF ABUSE AND INTIMATE PARTNER VIOLENCE ON DEPRESSION: DOES SOCIAL SUPPORT MATTER?

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TYPES OF ABUSE AND INTIMATE PARTNER VIOLENCE ON DEPRESSION: DOES SOCIAL SUPPORT MATTER?

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Abstract: Intimate partner violence (IPV) is a public health concern causing negative impacts across gender, socioeconomic strata, cultures, and ethnicities. The relation between IPV and negative mental health outcomes has been established, with more recent research examining the impact of various manifestations of IPV (e.g., abuse type and chronicity) on individual functioning. Protective factors, such as social support, have been identified that attenuate the increased risk for depression. Less is known about the interrelations between social support, depression, and abuse type (physical, psychological, sexual). While IPV is traditionally examined either from the victim or initiator role, it is also important to consider relationships in which both partners experience and demonstrate violence. Using a sample of caregivers at high-risk for experiencing adverse events, the current study examined the relation between IPV chronicity and severity by type (physical, psychological, and sexual) and depression among caregivers reporting unidirectional (reporting IPV victimization only) versus bidirectional (reporting victimization and initiation of IPV) violence. The impact of social support on depression levels among those reporting unidirectional versus bidirectional physical IPV was also assessed. Results suggest that the majority of the sample (44%) reported bidirectional IPV as compared to victimization only (11%), initiation only (7%) or no IPV (38%), and that this difference was statistically significant. Regarding the impact of abuse type on depression, results indicate that among those reporting unidirectional or bidirectional IPV, abuse variables were not significantly associated with depression. Further, the interactions between social support and abuse variables on depression were not statistically significant. However, those reporting more social support reported significantly lower depression levels regardless of their report of IPV. Findings suggest that both initiation and victimization of IPV should be assessed among individuals at risk for abuse, as the majority of participants reported bidirectional IPV as compared to IPV initiation or victimization. The importance of social support was also identified in this study. Clinicians should assess for patients' unidirectional and bidirectional IPV, particularly among those with young children at high-risk for experiencing adverse events. Connections to social support should also be a focus for clinicians working with families.

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CHAPTER I

INTRODUCTION

Background

Intimate partner violence (IPV) is a major public health concern affecting nearly twelve million couples and families across the United States annually (Black et al., 2011). IPV is frequently categorized by physical, sexual, and psychological (also referred to as "emotional") abuse (CDC, 2013), with each type of IPV ranging along a continuum of severity and frequency. In an effort to better understand the impacts of IPV, research has examined prevalence rates of each abuse type, with psychological abuse serving as the most common type of abuse reported (Black et al., 2011; Thompson et al., 2006).

Over the last several decades, much of the research on IPV prevalence rates and impacts on functioning has focused solely on victims of physical, psychological, and/or sexual abuse. Researchers suggest that failure to conceptualize various manifestations of IPV beyond victimization causes research to be misinterpreted (Johnson, 2006). More specifically, it has been argued that studies investigating IPV as violence committed by males against females creates biased sampling and, therefore, results in non-representative samples of IPV (Johnson, 1995, 2005, 2006). These biased sampling procedures do not capture female-initiated IPV or IPV committed by both partners. Efforts to examine cases of IPV where either partner may serve as initiators, victims, or both have been the focus of more recent research.

Varying manifestations of IPV have been classified as unidirectional versus bidirectional IPV to better characterize victimization and initiation of abuse. Unidirectional IPV occurs when

one partner either commits abuse or is a victim of the abuse, while bidirectional IPV occurs when a partner commits and is a victim of the abuse (Robertson & Murachver, 2007; Straus, 2008; Tyler, Melander, & Noel, 2009). Despite many previous studies investigating unidirectional IPV (victims) only, bidirectional IPV presents a more accurate reflection of partner abuse, as it is more common for both partners to serve as the initiator and victim of violence as opposed to one or the other (Anderson, 2002; Gray & Foshee, 1997; Palmetto et al., 2013; Whitaker, Haileyesus, Swahn, & Saltzman, 2007).

Compared to unidirectional IPV, bidirectional IPV is associated with higher frequency and greater severity of violence (Billingham, 1987; Capaldi et al., 2007; Gray & Foshee, 1997; Whitaker et al., 2007). While IPV in general is associated with a host of negative outcomes, bidirectional IPV in particular is linked to increased frequency and severity of injuries (Phelan, Hamberger, Hare, & Edwards, 2002), decreased relationship satisfaction and increased levels of distress (Katz, Kuffel, & Coblentz, 2002; Williams, & Freize, 2005), and mental health difficulties (Anderson, 2002; Ehrensaft, Moffitt, & Caspi, 2006; Forgey & Badger, 2010; Temple, Weston, & Marshall, 2005).

While many negative outcomes are associated with IPV, the association between IPV and increased depressive symptoms has been well demonstrated in the literature (Banyard & Cross, 2008; Holt & Espelage 2005; Johnson, Giordano, Longmore, & Manning, 2014; O'Campo et al. 2006; Stein & Kennedy, 2001). This positive association has been indicated across age groups (Johnson et al., 2014; Sussex & Corcoran, 2005), gender (Sillito, 2012; Winstok & Straus, 2014), sexual preference (Siemieniuk, Krentz, Gish, & Gill, 2010), and cultures (Mapayi et al., 2013; Prosman, Jansen, Lo Fo Wong, & Lagro-Janssen, 2011), thereby emphasizing the importance of examining various types and manifestations of IPV. Depression is one of the most common diagnoses among women experiencing IPV, with an average of 47.6% of women reporting depression (Golding, 1999). Given the common link between IPV and depression, it is imperative to identify protective factors that buffer against these negative effects of partner abuse.

A number of protective factors have been found to protect against depressive symptoms among those reporting IPV including religion and/or spirituality, higher education, employment,

increased self-esteem, absence of economic hardship, and good health (Carlson, McNutt, Choi, & Rose, 2002; Gillum, Sullivan, & Bybee, 2006; Watlington & Murphy, 2006). Social support also plays a protective role against depression among those experiencing IPV (Beeble, Bybee, Sullivan, & Adams, 2009; Coker et al., 2002; Faisal-Cury, Menezes, d'Oliveira, Schraiber, & Lopes, 2013; Mburia-Mwalili et al., 2010; Meadows, Kaslow, Thompson, & Jurkovic, 2005). While social support is protective for non-abused individuals, those in abusive relationships are sometimes isolated from their support network due to use of controlling tactics by their partners (Levendosky et al., 2004). However, partner isolation does not occur in all abusive relationships, as many manifestations of IPV exist. Thus, it is important to better understand the role of social support among individuals experiencing varying forms of IPV, including bidirectional versus unidirectional violence and physical, sexual, and/or psychological IPV. The current study sought to bridge the literature gap regarding each of these constructs.

Specific Aims

The current study sought to examine the influence of social support on the relation between varying types of abuse (both unidirectional and bidirectional) and depression. While much of the previous literature on IPV and depression reported on women reporting IPV victimization, these studies often fail to address the complexities involved when the individuals experiencing abuse, depression, and lack of support are also caregivers. Thus, the present study examined the interplay between these variables among female caregivers of young children at high-risk for experiencing adverse events. Specifically, the following relations were assessed: 1) physical abuse and depression, 2) sexual abuse and depression, and 3) psychological abuse and depression among participants reporting either unidirectional or bidirectional IPV. Further, given the aforementioned research suggesting the high prevalence of bidirectional IPV, we examined the prevalence of participants reporting unidirectional versus bidirectional IPV. Finally, the role of social support on abuse type and depression among victims of unidirectional and bidirectional IPV was explored.

CHAPTER II

REVIEW OF THE LITERATURE

Intimate Partner Violence

Intimate partner violence (IPV) is a major public health concern causing negative impacts across gender, socioeconomic strata, cultures, and ethnicities across the United States (Campbell, 1995; Jewkes, Levin, & Penn-Kekana, 2002; Klap, Tang, Wells, Starks, & Rodriguez, 2007). IPV has been defined in the literature as ". . . a pattern of coercive behaviors that may include repeated battering and injury, psychological abuse, sexual assault, progressive social isolation, deprivation, and intimidation" (Flitcraft, Hadley, Hendricks-Matthews, McLeer, & Warshaw, 1992). The Centers for Disease Control and Prevention (CDC, 2013) defines IPV as "physical, sexual, or psychological harm by a current or former partner or spouse." Although researchers have used a variety of definitions, the gravity associated with IPV is evident.

Acts of IPV are thought to fall along a continuum of severity and frequency ranging, for example, from one act of IPV to chronic and severe abuse (CDC, 2013). Recently, there has been a growing literature outlining definitions (Black et al. 2011; CDC, 2013; Flitcraft et al., 1992), risk and protective factors (Barrick, Krebs, & Lindquist, 2013; Caetano, Ramisetty-Mikler, & Field, 2005; Coker et al., 2000), prevalence rates (Black et al., 2011; Thompson et al., 2006; Tjaden & Thoennes, 2000), and impacts of IPV (Campbell, 2002; Coker et al., 2002; Flicker, Cerulli, Swogger, Cort, & Talbot, 2012; Humphreys, Cooper, & Miaskowski, 2011; Nathanson, Shorey, Tirone, & Rhatigan, 2012).

Prior to 1979, IPV was not considered a significant health concern by the Centers for Disease Control and Prevention. Dahlberg and Mercy (2009) proposed a timeline illustrating dates of important trends, movements, and developments contributing to shifts in IPV research. The resulting research revealed greater knowledge of IPV injury, death, and health concerns, causing researchers to more thoroughly investigate the effects of IPV. Consequently in 1980, the U.S. Department of Health and Human Services released a report entitled "*Promoting Health/Preventing Disease: Objectives for the Nation*" that led to more reliable research regarding family violence in the 1990s. Subsequently, IPV research expanded, including better definitions of types and prevalence rates of abuse across the U.S. Given the wide range of potentially abusive acts against an intimate partner, it is important that a clear and common definition exist for IPV. The National Center for Injury Prevention and Control (Black et al., 2011) has urged the use of consistent definitions of IPV in making state policy decisions, thereby strengthening efforts toward prevention. The response to the need included defining subtypes of IPV indicated by the type of violence with examples of acts committed for each IPV type (Black et al., 2011; Breiding, Chen, & Black, 2014; Saltzman, Fanslow, McMahon, & Shelley, 2002).

Types of Abuse. IPV is classified by three types of abuse: physical, sexual, and psychological (also referred to as "emotional" IPV; CDC, 2013). Saltzman et al. (2002) worked to develop a more unified understanding regarding types of abuse through a report outlining recommended definitions. Physical abuse involves using deliberate physical force toward a partner, and includes acts such as pushing, grabbing, punching, choking, slapping, and use of a weapon. Sexual abuse involves efforts to engage a partner in sexual activities against his or her will. Psychological or emotional abuse is defined by trauma caused by acts, threats of acts, or coercive tactics toward a partner and include humiliation, use of control, withholding information from the victim, and isolation from friends and family. In addition, stalking often falls under this category, as it includes repeated harassing and/or threatening behaviors (Saltzman et al., 2002).

Research has investigated the prevalence rates and chronicity of each type of abuse across samples of victims. In 2010, the CDC developed the National Intimate Partner and Sexual Violence Survey (NISVS) in an effort to outline prevalence rates, immediate impacts, and long-term consequences of IPV (Black et al., 2011). Findings suggest that as many as one in four females experience severe physically abusive IPV in their lifetimes, with one in seven males experiencing physical abuse at some point in their lives. While these lifetime prevalence data are alarmingly high, they are likely an underestimate of actual prevalence rates of IPV due to the sensitive nature and victims' need to maintain social desirability (Bell & Naugle, 2007; Fernandez-Gonzalez, O'Leary, & Munox-Rivas, 2013).

Compared to prevalence rates of physical abuse, statistics regarding sexually abusive IPV suggest more attenuated percentages. Defined by a completed or attempted sexual act, abusive sexual contact, and/or non-contact sexual abuse (e.g., voyeurism, unwanted exposure to pornography, taking nude photographs of the victim), prevalence rates for sexually abusive IPV remain extremely high. Research suggests differing prevalence rates across countries, with percentages of forced or coerced sexual initiation by partners estimated around 4% in developed countries and 31% in lower income countries (Heise, Ellsberg, & Gottemoeller, 1999; Laumann, 1996). Across ten diverse countries, the World Health Organization found that lifetime rates of sexually abusive IPV ranged from 6% to 59%, with current (previous twelve months) rates ranging from 1% to 44% (Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2006). In the United States, nearly 8% of females report being raped by a current or former intimate partner, while the percentage of males reporting rape by a partner is 0.3%. (Tjaden & Thoennes, 2000). These data also suggest an alarmingly high number of annual incidents of rape, as 201,394 adult females report being raped by an intimate partner each year in the U.S. According to the 2010 NISVS, approximately one in ten U.S. women reports being raped by a partner, and almost 17% of women and 8.0% of men report experiencing sexual abuse other than rape (e.g., unwanted sexual contact, sexual coercion, unwanted sexual experiences without contact; Black et al., 2011).

Psychologically abusive IPV is the most common type of abuse reported. The 2010 NISVS suggests the lifetime prevalence of psychological abuse is nearly 50% of women and nearly 50% of men (Black et al., 2011). Other research by Thompson et al. (2006) indicates that 35.1% of women report abuse other than physical and sexual (i.e., psychological and/or stalking) during their lives, and 10.2% endorse this type of abuse over a period of five years. The rates of co-occurrence of abuse types remain strikingly high as well.

Nearly 70% of female victims of IPV report enduring multiple types of abuse throughout their lifetimes (Thompson et al., 2006). This is not an uncommon finding, as research suggests that various types of abuse frequently co-occur (Basile & Hall, 2011; Coker, Smith, McKeown, & King, 2000; Smith, Thornton, DeVellis, Earp, & Coker, 2002; Sullivan, McPartland, Armeli, Jaquier, & Tennen, 2012). Namely, research suggests that as many as 97% of initiators of IPV admitted to engaging in all types of abuse including physical, sexual, psychological, and stalking (Basile & Hall, 2011). Additional research supports this finding, with results suggesting that women reported psychological abuse most frequently, with the odds of experiencing physical abuse being 64 times greater on days when participants reported psychological abuse compared to days with no psychological abuse (Sullivan et al., 2012). The research outlined above suggests that a disturbingly high number of individuals experience IPV each year in the U.S., and many of them endorse co-occurring types of abuse. Additional information is warranted to determine potential reasons why types of abuse frequently co-occur. Studies have broadened the scope of research on IPV from prevalence rates to frequency and severity of violence type in an effort to better understand how IPV impacts victims' functioning and perception of the incidents.

Frequency and severity of IPV. When assessing for IPV, it is important to gather information about frequency and severity of the violence. Some research supports the idea that IPV severity impacts the victim's attributions toward the initiator as well as the violence, which in turn influences likelihood of returning to the relationship (Gordon, Burton, & Porter, 2004). This provides indications that IPV frequency and severity play an important role in the victim's

perceptions of the violence, stressing the importance of assessing for frequency and severity when gathering information regarding IPV history. Prior to assessing for these elements of IPV, it is necessary to define what is meant by IPV severity. The 2010 NIVS characterized severity by type of injuries sustained during IPV and found that injuries ranged from minor bruises or scratches (12.8% of women reporting IPV) to being "knocked out after getting hit", slammed against something, or choked (5.2% of women reporting IPV; Breiding et al., 2014). Additional research found large percentages of individuals reporting high frequencies and heightened severity levels of IPV (Peek-Asa et al., 2011). Specifically, percentages of abused women reporting a minimum of four acts of physical abuse in the past year ranged from 40% to 62%, while percentages of abused women reporting severe to very severe physical abuse ranged from 10% to 30% (Peek-Asa et al., 2011).

These high rates of IPV frequency and severity suggest the need to examine rates specifically among physical, sexual, and psychological abuse. Studying rates among each type of abuse specifically could provide information related to victims' perceptions of the abuse (Gordon et al., 2004) and help determine if these perceptions vary based on abuse type. Research suggests that high percentages of women experiencing IPV report violent abuse (Thompson et al., 2006). Among women reporting physical abuse, 61% reported moderately to extremely violent abuse, compared to 81% of sexually abused women reporting moderately to extremely violent IPV and between 32% and 63% of psychologically abused women reporting moderately to extremely violent IPV, depending on how psychological abuse was characterized (i.e., controlling behavior versus anger or threats; Thompson et al., 2006). Further, increased IPV severity (defined by injury producing potential of physical and sexual acts; Straus & Gelles, 1990) has been associated with decreased memory and learning scores as well as increased distress, anxious arousal, worry, posttraumatic stress symptoms, and depressive symptoms (Cascardi & O'Leary, 1992; Houskamp & Foy, 1991; Valera & Berenbaum, 2003). These results underscore the impact of abuse severity on individual outcomes.

Other research found that IPV severity is dependent on gender, as males were found to commit more severe physical, sexual, and psychological abuse compared to females (Weston, Temple, & Marshall, 2005). The fact that gender differences have been found regarding initiation of severe abuse suggest the need to examine IPV via methods other than male-initiated violence. Research considering male- and female-initiated IPV found that the abuse was more frequent and severe when both partners committed abuse compared to when only one partner was abusive (Weston et al., 2005). These studies illustrate the complex nature of IPV, as it is important to consider types of abuse, number of types of abuse, gender of the initiator, and whether one or both partners are abusive.

Categories of IPV. Researchers have acknowledged the need to examine IPV as defined by differing categories. Some individuals argue that failure to conceptualize IPV in these categories causes research to be misinterpreted (Johnson, 2006). More specifically, Johnson (1995; 2005; 2006) asserted that studies investigating IPV primarily used biased samples such that violence was predominantly committed by males against females. Such biased sampling, he argued, resulted in non-representative samples of initiated IPV because they were not capturing female-initiated IPV or IPV committed by both partners. In response, Johnson (2005) proposed a theory of IPV classification that is now widely cited by researchers. This theory characterizes IPV in terms of exertion of control and suggests four categories of IPV: situational couple violence, violent resistance, intimate terrorism, and mutual violent control.

The first category, situational couple violence, usually occurs as a result of poor and unhealthy conflict resolution and is thought to be equally utilized across genders. This is the only category of IPV that does not stem from a general pattern of control. Instead, it is typically the outcome of the intensification of couple's conflict into some type of IPV, where arguments have simply "gotten out of hand" (Johnson, 1995). During situational couple violence one individual is violent without being controlling while the partner is also violent without exhibiting control or is nonviolent.

The second category of IPV is violent resistance, where one partner is violent without exhibiting controlling behaviors and the other partner is both violent and controlling. Oftentimes the violent, non-controlling partner is reacting in self-defense to the violent, controlling partner. According to Johnson (2006), women more frequently serve as the violent, non-controlling partner as compared to men who are more frequently both violent and controlling.

Intimate terrorism, the third category of IPV, refers to instances where only one partner is both violent and controlling while the other spouse is not violent or controlling. The violent and controlling partner often uses a wide range of tactics to exert control over the partner by any means necessary, thereby increasing the likelihood that the violence and control will progressively worsen over time (Johnson & Ferraro, 2000; Johnson & Leone, 2005).

Mutual violent control is the final category of IPV. This category occurs when both partners exhibit violence and controlling behaviors toward one another. Johnson has referred to this category of IPV as "two intimate terrorists battling for control" (Johnson & Ferraro, 2000, p. 950).

Regarding frequency of each type of violence, results from Johnson (2006) suggest that these data differ by gender. For instance, regarding male-initiated violence, intimate terrorism occurs most frequently, followed by situational couple violence, mutual violent control, and violent resistance (exhibiting controlling and violent behaviors). Regarding female-initiated violence, violent resistance (exhibiting violent but not controlling behaviors) occurs most frequently, followed by mutual violent control, situational couple violence, and intimate terrorism. Johnson's theory regarding the four categories of IPV is widely cited in the extant literature and provides a useful framework for understanding the different potential dynamics of IPV.

While conceptualizing IPV in terms of these proposed categories is a useful method for gaining an accurate representation of this construct, it is not always possible to gather information regarding participants' perceptions of control in their abusive relationship. Because this research

fosters the argument that IPV is committed by both men and women, research methods should more accurately capture this phenomenon.

Though research on IPV has focused on male-initiated violence on females for many years, researchers have begun to study IPV committed by females (Hamel, 2007). While women are five times more likely to be victims of IPV compared to men (Rennison & Welchans, 2000), results of other studies show that women commit IPV as often or more often than men (Archer, 2000; Melton & Belknap, 2003). Some research argues that women act as initiators of IPV as a means of self-defense, and that they are more likely than men to commit violence in self-defense (Britton, 2011). However, Straus (2012) disputes this argument, asserting that no studies' findings indicate that the majority of women acted in self-defense. Other studies instead have investigated which partner initiated IPV (Capaldi, Kim, & Shortt, 2007; DeMaris, 1992; Olson & Lloyd, 2005; Straus, 2005). Sixty-one percent of women were found to report initiating IPV in their relationships (Straus & Mickey, 2012). Due to these findings, the need to assess for male- and female-initiated violence is warranted. Some research has attempted to capture this by assessing for unidirectional versus bidirectional IPV.

Unidirectional IPV occurs when one partner either commits abuse or is a victim of the abuse, while bidirectional IPV occurs when a partner commits and is a victim of the abuse (Robertson & Murachver, 2007; Straus, 2008; Tyler, Melander, & Noel, 2009). Bandura's social learning theory (1977) has been identified to help describe the development and maintenance of bidirectional IPV, with research theorizing that victims of IPV are more likely to model abusive acts they witness from their partners or between their parents (Gray & Foshee, 1997; Lewis, Travea, & Fremouw, 2002; Palmetto, Davidson, Brietbart, & Rickert, 2013). Research suggests that bidirectional IPV presents a more accurate reflection of many cases of IPV such that it is more common for both partners to serve as both the initiator and victim of violence (Anderson, 2002; Gray & Foshee, 1997; Palmetto et al., 2013; Whitaker, Haileyesus, Swahn, & Saltzman, 2007). Anderson (2002) found that the majority of IPV cases involve bidirectional IPV, while

those who endured unidirectional IPV consist of mostly female initiators and male victims. Consistent with Johnson's (2006) argument, these findings suggest that bidirectional IPV occurs at a higher rate than previously thought. For instance, bidirectional IPV has been found to occur in one half to three quarters of violent relationships (Gray & Foshee, 1997; Whitaker et al., 2007).

Recently a comprehensive review was conducted to test rates of unidirectional and bidirectional IPV across differing genders, ethnicities, and sexual orientations (Langhinrichsen-Rohling, Misra, Selwyn, & Rohling, 2012). Findings indicate that 57.9% of all reported IPV was bidirectional violence. Among the remainder of the individuals reporting unidirectional IPV (42.1%), 28.3% of cases involved females committing violence against male victims while 13.8% were cases of IPV committed by males. This is consistent with research arguing that most IPV is actually bidirectional in nature (Anderson, 2002; Gray & Foshee, 1997; Palmetto et al., 2013; Whitaker et al., 2007). Langhinrichsen-Rohling and colleagues (2012) also examined rates of unidirectional and bidirectional IPV among heterosexual, bisexual, and homosexual relationships, concluding that rates did not differ among these samples. These findings bolster the need to continually conduct research on bidirectional versus unidirectional IPV as opposed to male-initiated IPV alone (unidirectional) in an effort to capture IPV more accurately. Additionally, it is necessary to specifically examine the differential impacts of bidirectional and unidirectional IPV on functioning and outcomes.

Compared to unidirectional IPV, research suggests that bidirectional IPV is associated with higher frequency and greater severity of violence (Billingham, 1987; Capaldi et al., 2007; Gray & Foshee, 1997; Whitaker et al., 2007). It is also linked to negative outcomes including increased frequency and severity of injuries (Cascardi & Vivian, 1995; Phelan, Hamberger, Hare, & Edwards, 2002; Vivian, 1998), decreased relationship satisfaction and increased levels of distress (Katz, Kuffel, & Coblentz, 2002; Williams, & Freize, 2005), and increased levels of depression (Anderson, 2002; Ehrensaft, Moffitt, & Caspi, 2006; Forgey & Badger, 2010; Temple, Weston, & Marshall, 2005). This suggests that bidirectional IPV is a distinct phenomenon and

may be associated with unique difficulties compared to one-sided violence. However, with some exceptions, most of this research compares outcomes among men and women experiencing bidirectional IPV as opposed to examining impacts among those experiencing bidirectional versus unidirectional IPV. It is also unclear what other variables modify these relations; additional research is needed to answer these questions. Given the fact that research on bidirectional IPV is relatively recent, decades of research have focused mostly on the influence of unidirectional IPV on victims' functioning.

Impacts of IPV on individual functioning. Research has investigated consequences of IPV for victims across various areas of functioning including injuries (CDC, 1998), negative physical health outcomes (Campbell, 2002; Coker et al., 2002; Humphreys et al., 2011; Kendall-Tackett, Marshall, & Ness, 2003; Koopman et al., 2007; Wuest et al., 2008), and mental health difficulties (Coker et al., 2002; Flicker et al., 2012; Nathanson et al., 2012; Slashinski et al., 2003). IPV has been found to be one of the most common causes of injury among women (Rand, 1997). The most frequent injuries reported by IPV victims include swellings, scratches, bruises, black eyes, broken bones, knife wounds, burns, and bites (CDC, 1998).

In addition to the immediate injuries resulting from IPV, research reports on long-term health consequences as well. Compared to those without a history of IPV, female victims of IPV endorse more symptoms of gastrointestinal symptoms and disorders such as loss of appetite and chronic symptoms of irritable bowel syndrome (Coker, Smith, Bethea, King, & McKeown, 2000; Leserman, Li, Drossman, & Hu, 1998). Other health consequences associated with IPV include hypertension, chest pain, and other cardiac problems (Plichta, 1996; Tollestrup et al., 1999). Given these negative health consequences among victims, the association found in research between IPV and health care utilization is understandable. After controlling for confounding variables such as risk factors, contextual factors, and family background variables, Fletcher (2010) found that IPV victims reported poorer physical health status and higher levels of health care utilization compared to those without an IPV history. Results suggesting increased health

care utilization among those experiencing IPV can also be traced to the mental health impacts within this sample of individuals.

The correlation between IPV and mental health problems has been well demonstrated in the literature (e.g., Bonomi et al., 2006; Coker et al., 2000; Coker et al., 2002; Kramer, Lorenzon, & Mueller, 2004; Nicolaidis, Curry, McFarland, & Gerrity, 2004). A number of psychological difficulties are associated with IPV including anxiety (Do, Weiss, & Pollack, 2013), depression (Anderson, 2002; Beydoun, Beydoun, Kaufman, Lo, & Zonderman, 2012; Coker et al., 2002; Flicker et al., 2012; Roberts, Klein, & Fisher 2003), posttraumatic stress symptoms (Golding, 1999; Nathanson et al., 2012), substance use disorders (Anderson, 2002; Coker et al., 2002; Roberts et al., 2003), suicidal ideation (Do et al., 2013; Roberts et al., 2003), sleep disturbance (Rauer & El-Sheikh, 2012; Warshaw et al., 2009), and low self-esteem (Warshaw et al., 2009). Though each of these mental health problems has been found to be associated with IPV, research indicates that the two most common psychological outcomes among IPV victims are symptoms of posttraumatic stress disorder (PTSD) and depression (Golding, 1999; Woods, 2005). Thus, IPV has demonstrated a significant impact on individuals' functioning across a number of areas. One additional area shown to be impacted by IPV is the family environment.

Impacts of IPV on the family. In addition to IPV's impact on individuals' mental and physical health, the influences of IPV are far-reaching and can affect the entire family. Children affected by IPV, for instance, have been found to experience more adverse outcomes as compared to children who have not experienced IPV including internalizing symptoms (de la Vega, de la Osa, Granero, & Ezpeleta, 2013; Kernic et al., 2003; Reinherz, Paradis, Giaconia, Stashwick, & Fitzmaurice, 2003), externalizing symptoms (Jouriles, Murphy, & O'Leary, 1989; Kernic et al., 2003; Zarling et al., 2013), and posttraumatic stress symptoms (Graham-Bermann & Levendosky, 1998; Kilpatrick & Williams, 1997; Lang & Stover, 2008). Lamers-Winkelman, De Schipper, and Oosterman (2012) found that children between the ages of six and 12 who witnessed IPV were significantly more likely to have eating problems (e.g., nausea, vomiting, having overweight),

difficulty sleeping (e.g., sleeping less, nightmares, nocturnal enuresis), complaints of aches and pains (e.g., headaches, dizziness), to engage in self-harm, and to have suicidal ideation compared to children who did not witness IPV. Other research found that children exposed to IPV exhibited more clinically significant externalizing and internalizing symptoms compared to children who did not witness IPV, with this being particularly true for children ages 7 to 14 (Sternberg, Baradaran, Abbott, Lamb, & Guterman, 2006). Similarly, Reinherz et al. (2003) found that children exposed to IPV before age 15 were four times more likely to report depressive symptoms in adulthood (ages 18 through 26) than children who were not exposed to IPV. While several studies focus on the potential impact of IPV on children's internalizing and externalizing symptoms, other research emphasizes the increased risk of child abuse and neglect among families where IPV occurs.

Research has also found that children exposed to IPV are at-risk for additional trauma, as studied by the impact of IPV alone on children's functioning compared to exposure to IPV coupled with other traumatic events (Graham-Bermann, Castor, Miller, & Howell, 2012). Graham-Bermann et al. (2012) assessed for multiple types of trauma including IPV among 120 preschool children. Thirty-eight percent of these children were exposed to additional traumatic events such as sexual abuse by family members, physical assault, serious accidents, and/or life-threatening illnesses. Children exposed to multiple traumas exhibited more frequent diagnoses of PTSD and traumatic stress symptoms, internalizing, and externalizing behavior problems as compared to children exposed to IPV only. Moreover, children exposed to IPV are 2.5 times more likely to be physically abused and nearly five times more likely to be sexually abused as compared to children who did not witness IPV (Zolotor, Theodore, Coyne-Beasley, & Runyan, 2007). In fact, IPV is one of three main risk factors for child abuse and neglect (Chaffin, Bonner, & Hill, 2001, Duggan et al., 2004; Eckenrode et al., 2000). In addition to examining IPV as a risk factor for negative consequences, it is important to study various risk factors of IPV itself.

Risk factors. Identifying risk factors for IPV is necessary in order to guide efforts toward

intervention and prevention of violence, as this allows researchers and clinicians to determine who is at high-risk for IPV and where resources can be applied. When identifying risk factors for IPV, it is important to distinguish between IPV initiation and victimization. One significant risk factor for IPV initiation that has been identified in the literature is witnessing IPV between parents during childhood (Afifi, Macmillan, Cox, Asmundsen & Stein, 2009; O'Leary, Tintle, & Bromet, 2014; Stith et al., 2000). Other childhood experiences such as abuse and neglect (Ehrensaft et al., 2003; O'Leary et al., 2014; Stith et al., 2000) and dating at a young age (Makepeace, 1987; O'Leary et al., 2014) have been found to be risk factors for initiation of IPV. Additionally, symptoms of psychopathology including anger (Hamberger & Holtzworth-Munroe, 2009; Norlander & Eckhardt, 2005), depression (Hamberger & Holtzworth-Munroe, 2009; Pan, Neidig, & O'Leary, 1994), and substance abuse (Hamberger & Holtzworth-Munroe, 2009; O'Farrell & Murphy, 1995; O'Leary, Tintle, Bromet & Gluzman, 2008; O'Leary et al., 2014) are reportedly higher in initiators of IPV as compared to non-initiators of IPV.

A collection of variables has also been found to be associated with IPV victimization. Similar to its association with risk for IPV initiation, violence within the family of origin including child maltreatment (Linder & Collins, 2005; Renner & Slack, 2006) and witnessing IPV between parents (Ehrensaft et al., 2003; Linder & Collins, 2005; Renner & Slack, 2006) has been identified as a risk factor for IPV victimization. Individuals with symptoms of psychopathology are also at risk for IPV victimization compared to those without psychopathology. Specifically, depression (Halpern, Spriggs, Martin, & Kupper, 2009), suicide attempts (Coker et al., 2000), and substance abuse (Schluter, Abbott, & Bellringer, 2008; White & Chen, 2002) serve as risk factors for IPV victimization. In addition to investigating which constructs are associated with increased risk of IPV initiation and victimization, other research has shown that certain risk factors are linked to each type of abuse (Coker et al., 2000).

Coker et al. (2000) examined correlates of each abuse type to determine differences across types. Insurance status, marital status, family history of IPV, partner employment status,

and partner substance use were associated with all three types of abuse. Given the frequent finding that low SES is a risk factor for IPV (Cunradi, Caetano, & Schafer, 2002; Gelles, 1997; Hoffman, Demo, & Edwards, 1994), it is possible that low SES is a better explanation for the link between insurance status and IPV (Coker et al., 2000). Further, it is possible that low SES serves as a proxy variable for constructs such as poverty, and these possibilities should be considered as well. Additional findings from Coker et al.'s (2000) study include the association between physically and sexually abusive IPV with older age and unemployment. With regard to race, white individuals were more likely to experience physical but not sexual or psychological abuse. Factors associated with both physically and sexually abusive IPV include female attraction to both men and women, illicit drug use, and experiencing sexual assault when incapacitated (i.e., unable to provide consent; Barrick et al., 2013). Past or current physically abusive IPV has been found to be higher among divorced or separated women compared to married women (Coker et al., 2000). Other risk factors for all three types of abuse include age with younger participants being more likely to report IPV, female same-sex attraction, diagnosis of posttraumatic stress disorder, and depression (Barrick et al., 2013). Depression is a widely researched construct, with one focus of this research being on its link to IPV.

Depression

Depression is a disorder that has been well studied across genders, age groups, ethnicities, and in a variety of contexts (Aponte-Rivera et al., 2014; Gourounti, Anagnostopoulos, & Lykeridou, 2013; Khawaja & Duncanson, 2008; Pickett et al., 2014). According to *The Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM–5*; American Psychiatric Association, 2013; p. 160), depression is marked by a two-week period of "depressed mood most of the day, nearly every day" and/or "markedly diminished interest or pleasure" in most or all activities most of the day, nearly every day. The *DSM-5* further characterizes depression by symptoms such as significant weight and/or appetite change, difficulty sleeping, feelings of worthlessness or guilt, energy loss, difficulty concentrating, and recurrent thoughts of death

and/or suicide (American Psychiatric Association, 2013).

According to the Morbidity and Mortality Weekly Report (MMWR) provided by the CDC (2010), 9.1% of adults had significant symptoms of depression, including 4.1% of these individuals who met criteria for major depressive disorder. Although depression affects all types of individuals, certain demographic characteristics are more associated with depression compared to others. For instance, individuals between the ages of 45 and 64, women, those with lower education, individuals previously married, unemployed persons, and those without health insurance are at an increased risk for depression (CDC, 2010).

In addition to the demographic characteristics found to be associated with depression, several other constructs, including other mental health difficulties, have also demonstrated a relation with depression. Depression often co-occurs with disorders such as anxiety disorders (Axelson & Birmaher, 2001; Essau, 2008; Huppert, 2009; Ohayon & Schatzberg, 2010), substance use disorders (Crum, Storr, Ialongo, & Anthony, 2008; Huppert, 2009), posttraumatic stress disorder (Magruder et al., 2005), and eating disorders (Blinder, Cumella, & Sanathara, 2006; Dennard & Richards, 2013). Additionally, studies indicate that depression is often comorbid with various health conditions. These include chronic illnesses such as diabetes (Anderson, Freedland, Clouse, & Lustman, 2001; Katon et al., 2004), cancer (Sharpley, Bitsika, & Christie, 2010; Sotelo, Musselman, & Nemeroff, 2014), asthma (Chen et al., 2014; de Miguel Díez et al., 2011), and hypertension (Shim et al., 2013). Some research has been conducted that compared levels of functioning between individuals with depression and individuals with chronic medical conditions including but not limited to asthma, diabetes, arthritis, and heart problems (Wells & Sherbourne, 1999). Results suggest that compared to patients with chronic medical conditions, patients with depression report significantly worse mental health and emotional and social functioning. Patients with depression also reported worse physical functioning compared to patients with certain chronic conditions (e.g., asthma, hypertension, gastrointestinal tract problems, and migraines). These studies underscore the tendency of depressive symptoms to co-

occur with various other conditions, thereby influencing individuals' functioning across a number of areas. Similarly, depression has been shown to impact women during pre- and postnatal periods, contributing to negative effects for the mother and the family environment.

Maternal depression. Maternal depression has been found to be the leading cause of disability related to disease for women (Kessler, 2003). Specifically for women ages fifteen to forty-four, depression was the second leading cause of disability (The World Health Organization, WHO, 2001). Compared to men, women are significantly more likely (70%) to report depressive symptoms throughout their lifetimes (National Institute of Mental Health, NIMH, 2012). This finding was corroborated by the CDC National Center for Health Statistics, as 6.7% of females compared to 4.0% of males had depression in the United States between 2005 and 2006 (Pratt & Brody, 2008). In general, studies have found that pregnant women are less likely to meet criteria for depression compared to women who are not pregnant (Ko, Farr, Dietz, & Robbins, 2012; Vesga-Lopez et al., 2008). The prevalence of major depressive disorder among pregnant women was found to be 5.6% compared to 8.1% of non-pregnant reproductive-aged women (Vesga-Lopez et al., 2008). However, women's risk for depression slightly increases during the first three months following childbirth (Gavin et al., 2005; Gaynes et al., 2005). Symptoms of maternal depression frequently contribute to difficulties in functioning for mothers including disruptions in sleep, appetite, and energy levels (Boyd, Le, & Somberg, 2005). The effects of maternal depression also extend to impact the family environment, including the relationship between the mother and child.

Women with maternal depression engage in less face-to-face interaction with their children including smiling, verbal communication, imitation, and game-playing compared to mothers without depression (Field, Diego, Hernandez-Reif, 2006). Additionally, interaction styles of mothers with depression are often represented on two ends of a continuum with some mothers engaging in a controlling and intrusive interaction style while others demonstrating a withdrawn and passive interaction style with their children (Malphurs, Raag, Field, Pickens, Pelaez-

Nogueras, 1996). Mothers with depression have also been found to engage in fewer activities with their children involving reciprocal interactions such as reading, singing, story-telling, and game-playing (Paulson, Dauber, & Leiferman, 2006). Maternal depression has also been linked to undesirable feeding practices (i.e., early discontinuation of breastfeeding, feeding difficulties of the child; Dennis & McQueen, 2007; Righetti-Veltema, Conne-Perreard, Bousquet, & Manzano, 2002), children's sleep problems (Dennis & Ross, 2005; McLearn, Minkovitz, Strobino, Marks, & Hou, 2006), and reduced safety practices (e.g., use of car seats, attention to water temperature, use of electric outlet covers; McLearn et al., 2006). These types of interactions between children and their mothers with depression are associated with negative child outcomes as well (England & Sim, 2009; Garai et al., 2009; Robila & Krishnakumar, 2006).

Effects of maternal depression on children. Research has demonstrated a link between maternal depression and problems with children's physical health (Bagedahl-Strindlund, Tunell, & Nilsson, 1988; Billings & Moos, 1983; De Miranda et al., 1996; Rahman, Iqbal, Bunn, Lovel, & Harrington, 2004). For instance, children with mothers suffering from depression are more likely to have allergies, asthma, colds and coughs, headaches, and indigestion compared to children with mothers without depression (Billings & Moos, 1983). Maternal depression has also been associated with a variety of children's weight difficulties. Rahman et al. (2004) found that maternal depression was a risk factor for infant malnutrition and poor growth in a low-income country. Other research, however, found that persistent maternal depressive symptomatology was associated with an increased risk of childhood overweight and obesity over time (Wang et al., 2013). While these studies underscore the potential impact of maternal depression on children's physical health, additional research focuses on depression's influence on children's psychological functioning.

Children with mothers suffering from depression are at an increased risk for experiencing internalizing and externalizing disorders (England & Sim, 2009; Garai et al., 2009; Munson, McMahon, & Spieker, 2001; Robila & Krishnakumar, 2006; Weissman et al., 2006). Weissman

et al. (2006) found that compared to children with parents who were not depressed, children of mothers with depression were approximately three times more likely to develop anxiety disorders, major depression, and substance dependence. Children of depressed parents also exhibited greater social impairment than children of non-depressed parents. Further, upon a twenty-year follow-up, the risk of depression among children of depressed parents was maintained. The aforementioned research highlights the significant contribution that maternal depression can have on family functioning. In order to better understand the effects of maternal depression on the family, it is necessary to examine research across differing populations including those at high-risk for adverse experiences such as child abuse and neglect.

Research has focused on depression of the caregiver as it relates to child abuse and neglect (Ammerman et al., 2009; Chaffin et al., 2001; Duggan, Berlin, Cassidy, Burrell, & Tandon, 2009; Duggan et al., 2004; Eckenrode et al., 2000; Windham et al., 2004). In addition to the contribution of maternal depression to negative parent-child interactions, other research suggests that mothers with depression are more likely to spank, feel aggravated, and yell at their children compared to mothers without depression (Lyons-Ruth, Wolfe, Lyubchik, & Steingard, 2002). Mapp (2006) conducted a path analysis assessing the pathway from caregiver history of childhood sexual abuse toward current risk of physically abusing their children. Findings indicate that this pathway is dependent on current level of depression experienced by the caregiver, thereby emphasizing the significant role of depression on risk for child maltreatment. Depression is a main risk factor for child abuse and neglect, with IPV serving as another main risk factor (Chaffin et al., 2001; Duggan et al., 2004; Eckenrode et al., 2000). The risk for child maltreatment has been found to increase with the number of risk factors, such as depression and IPV, present in the family environment (Brown, Cohen, Johnson, & Salzinger, 1998).

IPV and Depression

The association between IPV and increased depressive symptoms has been well demonstrated in the literature (Banyard & Cross, 2008; Cascardi, O'Leary, & Schlee, 1999;

Golding, 1999; Gleason, 1993; Holt & Espelage 2005; Johnson, Giordano, Longmore, & Manning, 2014; O'Campo et al. 2006; Stein & Kennedy, 2001). This positive association has been indicated across age groups (Johnson et al., 2014; Sussex & Corcoran, 2005), gender (Sillito, 2012; Winstok & Straus, 2014), sexual preference (Siemieniuk, Krentz, Gish, & Gill, 2010), and cultures (Mapayi et al., 2013; Prosman, Jansen, Lo Fo Wong, & Lagro-Janssen, 2011). Results of a meta-analysis found that depression was one of the most common diagnoses among women who experienced IPV, with an average of 47.6% of women reporting depression (Golding, 1999). According to researchers, 24% of individuals experiencing IPV reported clinically significant depressive symptoms during the two weeks prior to participation in the study (Mburia-Mwalili, Clements-Nolle, Lee, Shadley, & Yang, 2010). Similarly, women who experienced IPV had 2.6 times increased risk of depressive symptoms and 4.0 times increased risk of "severe" depressive symptoms compared to women without IPV exposure (Bonomi et al., 2006). Most of the studies examining the relation between IPV and depression have been cross-sectional and do not distinguish between different types and levels of depression.

To partly address this limitation, researchers recently conducted a meta-analysis and systematic review to determine the magnitude of the relation between IPV and different types of depression (major depressive disorder and postpartum depression) among pregnant and nonpregnant women (Beydoun et al., 2012). Results of the meta-analysis and systematic review conducted by Beydoun et al. (2012) suggest that a moderate to strong positive association exists between IPV and depression. In fact, findings suggest that IPV is associated with a two- to three-fold increase in the risk of major depressive disorder and a 1.5- to two-fold increase in the risk of postpartum depression and elevated depressive symptoms among IPV victims compared to those without an IPV history. Further, 9-28% of overall depressive symptoms could be explained by lifetime exposure to IPV. This study is useful in furthering researchers' understanding of the relation between IPV and different types of depression as opposed to much of prior research examining overall IPV and depression. More recent research has also attempted to fill in the gap

by investigating the influence of IPV on depression over time since depressive symptoms fluctuate (Galambos, Barker, & Krahn 2006; Garber, Keiley, & Martin 2002; Johnson et al., 2014; Ridings, 2013).

Research has also investigated whether depressive symptoms change as a function of changes in IPV exposure over time (Johnson et al., 2014). Johnson and colleagues (2014) discovered a recency effect when examining this relation, as results showed that the most recent experience of IPV was most strongly related to current depressive symptoms above and beyond cumulative IPV exposure. However, it is possible that these individuals' depression interfered with their self-efficacy and problem-solving abilities within their relationships, thereby increasing the risk of acting out violently. These data revealed the dynamic nature of IPV, as the majority of participants did not remain in only one category of initiation, victimization, or bidirectional IPV. This dynamic nature was highlighted by findings that IPV and depression demonstrated a relation among both victims and initiators, depending on what category of IPV with which they identified during the assessment. These findings lend themselves to the importance of categorizing IPV in a more non-traditional fashion (e.g., bidirectional versus unidirectional IPV, psychological versus physical versus sexual abuse) and studying the impacts of each on functioning.

Differing patterns of IPV and depression. Although much of research on victims exposed to violence defines IPV in terms of endorsement of any type of abuse (e.g., Campbell et al., 2002; Coker, 2007; Coker et al., 2000; Golding, 1999), other studies have focused on specific types of abuse and associated outcomes (Bonomi, Anderson, Rivara, & Thompson, 2007; Carbone-Lopez et al., 2006; Coker et al., 2002; Houry et al., 2006; Pico-Alfonso et al., 2006; Sullivan, McPartland, Armeli, Jaquier, & Tennen, 2012). Research reveals mixed findings regarding which type of abuse is associated with the most significant negative outcomes. Individuals experiencing psychological abuse, for instance, have been found to have the highest risk of depressive symptoms compared to other types of abuse, with their risk increased by three-fold (Coker, Smith, & Fadden, 2005). Similarly, individuals with a history of psychological abuse

alone have significantly higher mean scores on depression scales as compared to individuals without a history of IPV (Al-Modallal, 2012).

Other studies have found that sexual abuse is followed by the most substantial negative outcomes (Bonomi et al., 2007; Carbone-Lopez et al., 2006; Coker et al., 2002; Houry et al., 2006; Pico-Alfonso et al., 2006). Prevalence ratios were found to be higher for women reporting sexual abuse alone compared to combined sexual and physical abuse or physical abuse alone (Bonomi et al., 2007). Among women reporting sexual abuse only, Bonomi and colleagues (2007) found a significant increase in depressive symptoms compared to women reporting only physical abuse. Further, individuals who experienced sexual abuse are approximately five times more likely to threaten or attempt suicide compared to those reporting physical abuse alone (McFarlane & Malecha, 2005; McFarlane et al., 2005). Although these results suggest that the impact of each type of abuse (physical, sexual, and psychological) differs across studies, the finding that all types of abuse are associated with increased depression remains evident. Additional research is needed to better understand why these differing results exist, and to assess for potential circumstances that drive these differences.

One possible area to explore in order to gain an understanding surrounding the mixed findings related to IPV impacts is gender differences in bidirectionally violent relationships. Much of the research examining impacts of bidirectional IPV has found differential effects for women as compared to men. Women experiencing bidirectional IPV not only report a higher frequency of injuries sustained by IPV, but also report more severe injuries compared to men (Cascardi & Vivian, 1995; Phelan et al., 2002; Vivian, 1998). Hamberger (2005) and Frieze (2005) report more harmful impacts on women's physical and psychological outcomes overall compared to men. Among those in bidirectionally violent relationships, compared to men, women report significantly lower relationship satisfaction and higher distress (Katz et al., 2002; Williams & Frieze, 2005) and more psychiatric disorders such as depression, PTSD, and drug dependence (Ehrensaft, Moffitt, & Caspi, 2006). While it has been demonstrated that individuals experiencing

bidirectional IPV report problems with substance abuse and depression, research further suggests that women report approximately two times more severe impacts compared to men (Anderson, 2002). These findings implicate the detrimental effects of IPV on men's and women's physical and psychological functioning, particularly when the violence is mutual between partners. Other research has examined the association between depression and bidirectional versus unidirectional IPV among partners.

Though some studies demonstrate a link between bidirectional IPV and depression levels, research on this association is relatively limited. Some studies suggest that depression levels are higher among those experiencing bidirectional IPV compared to unidirectional IPV (Anderson, 2002; Forgey & Badger, 2010; Temple et al., 2005). Some research emphasizes the importance of examining severity level of bidirectional IPV when investigating its association with depression. For instance, Forgey and Badger (2010) found that individuals reporting "severe" bidirectional IPV also reported higher depression levels as compared to those experiencing "minor" bidirectional IPV, unidirectional IPV, or no IPV. Additional findings suggest that those reporting minor bidirectional IPV reported higher depression levels than those who did not report IPV, while those reporting unidirectional IPV did not report significantly different depression than those without an IPV history. Thus, these results highlight the importance of considering the severity of bidirectional IPV when studying its association with depression, as well as differences between bidirectional and unidirectional IPV. Examination of other variables that impact this relation, such as type of abuse, is warranted to enhance this research.

Research on the role of abuse type (i.e., physical, sexual, and psychological) in the relation between bidirectional IPV and depression is scarce. Some research has focused on the differential impact of abuse type on marital satisfaction, with findings revealing that among individuals experiencing bidirectional IPV, psychological abuse predicted lower marital satisfaction compared to other types of abuse (Panuzio & DiLillo, 2010; Schumacher & Leonard, 2005). While these findings elucidate the disparate influence of each type of abuse, depression

was not investigated as a primary outcome variable. Other research corroborates the finding that psychological abuse is associated with more severe outcomes compared to other types of abuse among individuals exposed to bidirectional violence (Sullivan, McPartland, Price, Cruza-Guet, & Swan, 2013). Specifically, among participants experiencing bidirectional IPV, greater frequency of psychological (though not physical or sexual) abuse was associated with higher levels of depression. This relation, however, was fully mediated by self-efficacy regarding participants' abilities to manage relationship difficulties. In the study by Sullivan et al. (2013), the influence of self-efficacy as a protective factor against depression is emphasized and underscores the need to investigate additional protective variables impacting this relation.

Protective Factors

Given the harsh effects of IPV and depression on individual and family functioning, research has investigated the ability of various protective factors to buffer against these effects. Some studies have focused on the impact of certain protective factors on individual constructs such as IPV and depression. For instance, religion and spirituality have been associated with decreased risk of IPV (Ellison & Anderson, 2001), while other research suggests religion and spirituality contribute to decreased depression symptoms (Braam et al., 2001; Koenig, George, & Peterson, 1998; Murphy et al., 2000; Smith, McCullough, & Poll, 2003). Other protective factors such as the ability to regulate mood and emotions (Molina & Kiely, 2011) have been associated with decreased depressive symptoms.

Researchers have also recognized the need to determine the impact of certain protective factors against negative outcomes among those exposed to IPV specifically. Similar to research suggesting that religion and spirituality are related to decreased IPV and depression individually, additional studies suggest that these protective factors contribute to decreased depression among victims of IPV (Gillum, Sullivan, & Bybee, 2006; Watlington & Murphy, 2006). Additional protective factors have also indicated reduction in depressive symptoms among IPV victims including education, employment, increased self-esteem, absence of economic hardship, and good

health (Carlson, McNutt, Choi, & Rose, 2002). Carlson et al. (2002) found that having an increased number of protective factors was associated with decreased depression, particularly among individuals reporting severe IPV. An additional protective factor identified by Carlson et al. (2002) is social support, as results suggest that increased social support was associated with decreased mental health difficulties among abused women.

Other research corroborates the finding that social support plays a protective role against mental health difficulties among women exposed to IPV (Beeble, Bybee, Sullivan, & Adams, 2009; Coker et al., 2002; Faisal-Cury, Menezes, d'Oliveira, Schraiber, & Lopes, 2013; Mburia-Mwalili et al., 2010; Meadows, Kaslow, Thompson, & Jurkovic, 2005). There are a wide variety of theories to help explain why social support plays such a significant role in this relation. One theory suggests that those committing abuse use controlling tactics to isolate their partners from their support network (Dobash & Dobash, 1998; Levendosky et al., 2004). This theory has been supported by results suggesting that higher levels of abuse were associated with lower levels of social support, lower levels of social support were associated with higher distress levels, and that social support mediated the relation between abuse and distress (Thompson et al., 2000). Other research found that women experiencing higher levels of IPV were less likely to receive support from friends compared to women reporting lower levels of abuse (Mitchell & Hodson, 1983). This study also found that more severe and frequent IPV was associated with victims' increased use of avoidance coping, allowing researchers to theorize that when women exposed to severe violence do not receive support from friends, they engage in avoidant coping strategies which, in turn, lead to increased depressive symptoms. This research suggests theories explaining the role of social support in the relation between IPV and depression. However, most of the research on these constructs is cross-sectional and therefore limit implications drawn from the results.

Beeble et al. (2009) extended previous research by examining longitudinal main, mediating, and moderating effects of social support on psychological functioning among individuals exposed to IPV. Their findings suggest that women with higher levels of social

support reported higher quality of life and lower depression at baseline and lower depression over time. Additionally, this study assessed for any differential effects between women experiencing physical abuse and those experiencing psychological abuse. Social support moderated the relation between psychological abuse and quality of life at baseline, as women reporting high levels of psychological abuse and low levels of social support at baseline endorsed decreased quality of life over time. While this study demonstrates the importance of examining these constructs longitudinally, other important aspects of IPV are not addressed, such as the potential impact of bidirectional as opposed to unidirectional IPV.

Research is lacking regarding examination of the impact of social support on the relation between types of abuse, IPV, and mental health outcomes such as depression. Sullivan et al. (2013) addressed the need to investigate the impact of protective factors on the relation between differing types (i.e., physical, sexual, and psychological) and categories (i.e., bidirectional) of IPV and depression by examining the impact of self-efficacy on this relation. Findings suggest that bidirectional psychological abuse was associated with greater severity of negative mental health outcomes including depression, and that this relation was mediated by relationship self-efficacy. These results highlight the need to examine IPV by type and category given the demonstrated differential impact on mental health outcomes. While these findings contribute to the extant research, it remains unclear if social support has a differential effect on depressive symptoms among individuals exposed to physical, psychological, or sexual abuse or those reporting unidirectional or bidirectional IPV. The current study sought to test this relation.

Current Study

The current study sought to examine the influence of social support on the relation between varying types of abuse (both unidirectional and bidirectional) and depression. Specifically, the following relations were assessed: 1) physical abuse and depression, 2) sexual abuse and depression, and 3) psychological abuse and depression among participants reporting either unidirectional or bidirectional IPV. Further, given the aforementioned research suggesting

the high prevalence of bidirectional IPV, we examined the prevalence of participants reporting unidirectional versus bidirectional IPV. Finally, the role of social support on abuse type and depression among victims of unidirectional and bidirectional IPV was explored.

Hypothesis One. IPV victimization and initiation have been found to be related constructs such that they are not independent of one another (Anderson, 2002; Gray & Foshee, 1997; Palmetto et al., 2013; Whitaker et al., 2007). The first hypothesis served as a replication of this research to determine if our study supported these findings. It was predicted that being an initiator of IPV would not be independent of being a victim of IPV such that participants would be more likely to serve as both a victim and an initiator than only a victim or only an initiator. Participants who responded positively to at least one item regarding physically violent behavior as both a victim and an initiator were categorized in the bidirectional IPV group (see Melander, Noel, & Tyler, 2010; Sullivan et al., 2013 for similar methodology).

Hypothesis Two. Research is mixed regarding disparate effects of IPV type on mental health outcomes, with some studies suggesting that psychological abuse contributes to more difficulties and others naming sexual abuse as the most influential type on outcomes (Bonomi et al., 2007; Carbone-Lopez et al., 2006; Coker et al., 2002; Coker et al., 2005; Houry et al., 2006; Pico-Alfonso et al., 2006). To clarify previous findings, our study explored the association between physical, psychological, and sexual abuse and depression among victims of unidirectional IPV, with unidirectional IPV hereinafter referring to victimization, not initiation, of physical abuse. Therefore, it was hypothesized that among those reporting unidirectional IPV, each type of abuse (physical, psychological, and sexual) would be significantly positively associated with depression. This was examined in two ways.

Hypothesis 2a. This hypothesis was first tested using chronicity scores from participants to determine the impact of abuse frequency on depression for each type of abuse. It was hypothesized that higher chronicity scores for each abuse type (physical, sexual, and psychological) would be positively associated with depression levels among those reporting

unidirectional IPV.

Hypothesis 2b. This hypothesis was then tested using severe and minor abuse scores from participants to determine if the relation between IPV and depression varied by severity. It was hypothesized that both severe abuse (physical, sexual, and psychological) and minor abuse would be positively associated with depression levels among victims of IPV.

Hypothesis Three. Research on whether social support is more influential in decreasing depression levels among victims of physical, sexual, or psychological abuse is also mixed, with research suggesting it may also depend on abuse chronicity and severity. Based on previous research suggesting that women experiencing more severe and frequent IPV report lower levels of social support (Mitchell & Hodson, 1983), it may be that social support is impactful and more available among those exposed to less severe IPV. Beeble et al. (2009) found that women reporting high levels of psychological abuse and low levels of social support at baseline endorsed decreased quality of life over time; this effect was not found for physical or sexual abuse. Other cross-sectional IPV research indicates that physically and/or sexually abused women with low social support are three to five times more likely to report depressive symptoms compared to physically and/or sexually abused women with high social support (Mburia-Mwalili et al., 2010). Due to results across studies emphasizing the impact of social support on depression among victims of various types of abuse, it was hypothesized that social support would significantly impact the relation between each type of unidirectional abuse and depression. In other words, among victims reporting unidirectional physical, sexual, and/or psychological abuse, those with higher levels of social support were predicted to have lower levels of depression compared to those with lower levels of social support. This was examined in two ways.

Hypothesis 3a. This hypothesis was first tested using chronicity scores from participants to determine the impact of social support and abuse type measured by chronicity (physical, sexual, psychological) on depression among victims of unidirectional IPV. It was hypothesized that social support would have a greater impact on decreased depression levels among

participants reporting higher compared to lower chronicity scores for each abuse type (physical, sexual, and psychological).

Hypothesis 3b. This hypothesis was then tested using severe and minor abuse scores from participants to determine the influence of social support on the relation between unidirectional IPV (measured by severity) and depression for each type of abuse. It was hypothesized that among participants reporting severe or minor abuse for each abuse type (physical, sexual, and psychological), those with higher social support would have lower depression scores than those with lower support.

Hypothesis Four. Given that bidirectional IPV is thought to occur more frequently compared to unidirectional IPV, research has begun to examine differences in impacts on mental health outcomes such as depression. Compared to unidirectional IPV, some research suggests that bidirectional IPV is associated with higher depression levels (Anderson, 2002; Forgey & Badger, 2010; Temple, Weston, & Marshall, 2005). Sullivan et al. (2013) found that among individuals involved in bidirectional IPV, those reporting psychological victimization also reported higher depression levels compared to physical or sexual IPV. However, this relation was fully mediated by self-efficacy. Hypothesis four is an extension of hypothesis two with the exception that we examined responses from those reporting bidirectional IPV as opposed to unidirectional IPV. Bidirectional IPV hereinafter refers to victimization and initiation of physical abuse as opposed to either victimization or initiation of physical abuse. Specifically, it was hypothesized that among those reporting bidirectional IPV, each type of abuse (physical, psychological, and sexual) would be significantly positively associated with depression.

Hypothesis 4a. This hypothesis was initially tested using chronicity scores from participants to determine the impact of abuse frequency on depression for each type of abuse. It was hypothesized that higher chronicity scores for each abuse type (physical, sexual, and psychological) would be positively associated with depression levels among those reporting bidirectional IPV.

Hypothesis 4b. This hypothesis was then tested using severe and minor abuse scores from participants to determine if the relation between bidirectional IPV and depression varies by severity. It was hypothesized that both severe abuse and minor abuse (physical, sexual, and psychological) would be positively associated with depression levels among those reporting bidirectional IPV.

Hypothesis Five. Finally, to our knowledge, social support has not been examined in the relation between bidirectional IPV and depression. Additionally, the role of social support has not been examined among individuals reporting bidirectional physical abuse in the relation between types of abuse (physical, sexual, and psychological) and depression. Hypothesis five is an extension of hypothesis three with the exception that we examined responses from those reporting bidirectional IPV as opposed to unidirectional IPV. It was hypothesized that social support would moderate the relation between physical abuse and depression, sexual abuse and depression, and psychological abuse and depression among individuals reporting bidirectional IPV. In other words, for participants reporting bidirectional IPV, higher levels of social support were predicted to be significantly associated with lower depression levels regardless of abuse type.

Hypothesis 5a. This hypothesis was initially tested using chronicity scores from participants to determine the impact of social support and abuse type measured by chronicity (physical, sexual, psychological) on depression among those reporting bidirectional IPV. It was hypothesized that social support would have a greater impact on decreased depression levels among participants reporting higher compared to lower chronicity scores for each abuse type (physical, sexual, and psychological).

Hypothesis 5b. This hypothesis was then tested using severe and minor abuse scores from participants to determine the influence of social support on the relation between bidirectional IPV (measured by severity) and depression for each type of abuse. It was hypothesized that among participants reporting severe or minor abuse for each abuse type (physical, sexual, and

psychological), those with higher social support would have lower depression scores than those with lower support.

CHAPTER III

METHODOLOGY

Participants

The current study utilized archived baseline data from a randomized clinical trial (RCT) evaluating the effectiveness of an empirically supported, home-based child maltreatment prevention model, SafeCare (SC), as compared to home-based community mental health services (Services as Usual; SAU). SC targets families with children ages five and under. SC for this study was comprised of three modules addressing parent-child interactions, home safety, and child health. Inclusion criteria for the RCT included being a caregiver of at least one child five years of age or younger and reports of at least one of three high-risk factors for child maltreatment (IPV, caregiver depression, and/or caregiver substance abuse). Participants were excluded from the RCT if they met one or more of the following criteria: (1) younger than 16 years of age, (2) limited proficiency with English language, (3) active involvement with child protective services at the time of the referral, and (4) greater than two previous child protective services referrals. For the current study, the following inclusion criteria were added: (1) report of a partner within the past year to capture the possibility of IPV within participants' relationships and (2) identification of female gender. Only data from female participants were used due to the small number of male participants in the sample (N=14, 2.5%).

Measures of Constructs

Demographic Information. Demographic information for each family was attained and

included the following information: gender, ethnicity, age, marital status, education level, size of the town in which they lived, information regarding government assistance, number and ages of children in the home, whether or not they were pregnant, and work status. This form has been successfully used on multiple program evaluation and treatment outcome studies.

Intimate Partner Violence. The Revised Conflict Tactics Scale (CTS2; Straus et al., 1996) was used to assess for IPV. This measure has demonstrated good reliability and validity across 17 countries (Straus et al., 1996; Straus, 2004). The CTS2 is comprised of 78 items, 39 of which assess participants' experiences as perpetrators of IPV (perpetrator scale) and 39 of which assess participants' experiences as victims of IPV (victim scale). Each item contains an 8-point scale assessing frequency of violence over the past year, each ranging from "never" to "more than 20 times." The CTS2 consists of subscales measuring five constructs: Negotiation, Psychological Aggression, Physical Assault, Injury, and Sexual Coercion. Each scale is further subdivided into two subscales. With the exception of the Negotiation subscale, all other scales have subscales "severe" and "minor" based on the severity of these behaviors. For the current study, we used the severe and minor subscale sum scores on the Physical Assault, Psychological Aggression, and Sexual Coercion subscales from the CTS2.

In addition to using the severe and minor subscales, IPV chronicity was assessed by measuring the number of times the acts in each subscale occurred over the last year among those who reported at least one act in a given scale. An example of a severe physically abusive act is "Has your partner used a gun or knife on you?" An example of a minor physically abusive act is "Has your partner grabbed you?" These two methods were used to measure IPV across all three types of abuse (physical, sexual, and psychological). Finally, those reporting positively to any items on both the victim and perpetrator scales of the Physical Assault subscale were placed in the "bidirectional IPV group," while those only responding positively to any items on the victim scale (but not perpetrator scale) of the Physical Assault subscale were placed in the "unidirectional IPV group." This method of classifying individuals in the bidirectional versus

unidirectional groups has also been used in previous studies (e.g., Melander et al., 2010; Sullivan et al., 2013).

Cronbach's alphas for the victim physical assault minor scale, victim physical assault severe scale, and victim physical assault subscale in the present study were .95, .86, and .95, respectively. Cronbach's alphas for the perpetrator physical assault minor scale, perpetrator physical assault severe scale, and perpetrator physical assault subscale were .82, .77, and .85, respectively. Regarding the victim psychological aggression scales, Cronbach's alphas for the minor scale, severe scale, and overall subscale were .86, .76, and .88, respectively. Regarding the perpetrator psychological aggression scales, Cronbach's alphas for the minor scale, severe scale, and overall subscale were .77, .85, and .81, respectively. For the victim sexual coercion scales, Cronbach's alphas for the minor scale, severe scale, and overall subscale were .63, .69, and .76, respectively. Regarding the perpetrator sexual coercion scales, Cronbach's alphas for the minor scale, severe scale, and overall subscale were .57, -.007, and .43, respectively. It is important to note that coefficient alphas for the perpetrator sexual coercion scales are particularly low. This is because the scores on the severe subscale are nearly constant, indicating that the scores do not change with additional values. Correlations between the items on this scale revealed negative correlations with one another and, thus, are represented by a negative coefficient alpha. The fact that only four participants endorsed items on the perpetrator severe sexual coercion scale likely contributes to these findings, and should be considered when interpreting results using this scale.

Depression. The Beck Depression Inventory-2nd Edition (BDI-II; Beck, Steer, & Brown, 1996) will be used to assess for depressive symptoms. The BDI-II contains 21 items, each of which ranges from 0 to 3 and is summed to provide a single depression score. The current study will utilize continuous scores of depression, with higher scores indicating increased depression levels. The BDI-II has shown good internal consistency (Jefferson, Powers, & Pope, 2000; Steer, Rissmiller, & Beck, 2000) and convergent and discriminant validity (Segal, Coolidge, Cahill, & O'Riley, 2008). Cronbach's alpha for the present sample was .91.

Social Support. To assess perceived social support, the Social Provisions Scale (SPS; Cutrona & Russell, 1987) will be used. The SPS contains 12 items asking participants the extent to which parents, friends, and partners provide certain dimensions of support. There are six of these dimensions of perceived support including attachment, reliable alliance, guidance, reassurance of worth, social integration, and opportunity for nurturance. Three response options exist to assess for availability of each dimension of support including "no," "sometimes," and "yes." The SPS has demonstrated evidence of validity (Roberts, Lepore, & Helgeson, 2006) and internal consistency (Ergh, Hanks, Rapport, & Coleman, 2003) across a variety of samples and cultures. Cronbach's alpha for the present sample was .81.

Procedure

Approval from the appropriate Institutional Review Board was obtained prior to implementation of the study procedures for the RCT. Questionnaire surveys were administered by an independent data collector; of interest to the proposed study are the demographic questionnaire, CTS2, BDI-II, and the SPS. To reimburse them for their time, participants received a $50 gift certificate to a local home needs establishment.

Statistical Analyses

Descriptive Statistics. Descriptive statistics (i.e., mean, standard deviation, and frequency) were used to describe study participant characteristics including age, ethnicity, income, and education level.

Demographic Variables. When conducting regression analyses, demographic variables were entered on step one of all models in an effort to control for any confounding effects of such variables. For all purposes of this study, demographic variables include participants' age, race and ethnicity, income, and education level. To reduce the number of variables in each regression model, race and ethnicity were dummy coded as "White" and "Non-White" due to the disproportional distribution of individuals across racial or ethnic groups in the current study.

Study Hypotheses. A chi-square test of independence was used to test the first

hypothesis that being an initiator of IPV would not be independent of being a victim of IPV. For hypotheses two and three, analyses only used participants reporting unidirectional physical assault (victims scale), while participants reporting bidirectional physical assault (victim and perpetrator scales) were used to test hypotheses four and five. Because hypothesis four (using bidirectional IPV data) is an extension of hypothesis two (using unidirectional IPV data), the same analyses were used to test both hypotheses.

Prior to conducting statistical analyses to test hypotheses two through five, correlational analyses were conducted to test the correlations between IPV study variables (physical, psychological, and sexual abuse) on the Victim and Perpetrator scales for Chronicity, Severe, and Minor subscales. For hypotheses two and four, hierarchical multiple regression analyses were conducted to determine the impact of IPV (chronicity and severity) on depression for each type of abuse (physical, sexual, and psychological). Depression served as the criterion variable. Demographic variables (race, age, education, and income) were entered on step one of each regression model to test for potential confounding variables. On step two, physical assault, sexual coercion, and psychological aggression (chronicity or severity variables) were entered. Chronicity and severity variables from the victim scale only were entered for hypothesis two, while chronicity and severity variables from both the victim and perpetrator scale were included for hypothesis four. Any variables significantly contributing to the regression models in hypotheses two and four were included in reduced, combined models testing hypotheses three and five, respectively.

An independent samples t-test was also conducted to determine if statistically significant differences in depression group means existed between IPV groups. Specifically, depression scores for those reporting unidirectional physical IPV and bidirectional physical IPV were compared.

For hypotheses three and five, hierarchical multiple regression analyses were conducted to test the impact of social support on the relation between IPV type and depression. Depression

served as the criterion variable. On step one, demographic variables (race, age, education, and income) were entered to test for potential confounding effects. All significant variables from hypothesis two or four were entered on step two of analyses testing hypotheses three and five, respectively. On step three, social support was entered. The interactions between significant variables and social support were entered on step four.

Statistical Power. The current study utilized archived baseline data from a larger study. Therefore, observed effect sizes and sample sizes were used to determine statistical power. In some instances, sample sizes were particularly low due to the categorization of participants into unidirectional and bidirectional IPV groups. These low sample sizes serve as a limitation to the study and are discussed in corresponding sections of the results and discussion sections.

Skewed Data. The CTS2 chronicity scale data demonstrate a highly positively skewed distribution due to the fact that most individuals reported a relatively low frequency of violent acts. Specifically, results of the Shapiro-Wilk Test of Normality suggest that response distribution for IPV Victim Chronicity variables (Physical: W=.44, p=.00; Psychological: W=.75, p=.00; Sexual: W=.48, p=.00), IPV Perpetrator Chronicity variables (Physical: W=.33 p=.00; Psychological: W=.74, p=.00; Sexual: W=.27, p=.00), IPV Victim Severe variables (Physical: W=.37, p=.00; Psychological: W=.54, p=.00; Sexual: W=.26, p=.00), IPV Victim Minor variables (Physical: W=.46, p=.00; Psychological: W=.79, p=.00; Sexual: W=.53, p=.00), IPV Perpetrator Severe (Physical: W=.21, p=.00; Psychological: W=.33, p=.00; Sexual: W=.08, p=.00), and IPV Perpetrator Minor variables (Physical: W=.41, p=.00; Psychological: W=.79, p=.00; Sexual: W=.25, p=.00) were highly positively skewed. Skewed data were handled by conducting a started log transformation of these predictor variables (IPV chronicity and severe and minor subscales for physical, sexual, and psychological abuse) and by using these transformed variables for all analyses where these variables were included.

Missing Data. All analyses were conducted using two methods to handle missing data: (1) listwise deletion using the assumption that data are missing at random, and (2) pairwise

deletion using the assumption that data are missing at random. Results using the pairwise deletion method are reported if results are not impacted differently by either approach. Results of both methods are reported when there are statistically significant differences between the two methods of handling missing data. Patterns in missing data were found regarding responses to items on the CTS2. Specifically, noticeable pattern differences were observed in CTS2 item responses in general as compared to items on other measures (e.g., BDI, SPS), suggesting that data are not missing completely at random (MCAR). It is possible that the sensitive nature of these items contributed to participants' refusal to respond. Listwise and pairwise deletion methods are valid when data are missing at random (MAR). Research suggests that these methods are also valid when data are missing not at random (MNAR) as long as missingness is observed among covariates independent of the outcomes, as is the case with the CTS2 in the current study (Bartlett, Carpenter, Tilling, & Vansteelandt, 2014; White & Carlin, 2010). It is unclear if CTS2 data are MAR or MNAR, either of which appropriately warrants use of listwise and pairwise deletion methods.

CHAPTER IV

RESULTS

Descriptive Statistics

The sample was comprised of 403 females ranging in age from 16-55 (*M* = 25.17; SD = 5.96). Racial or ethnic composition consisted of 39.0% Black, 42.2% White, 11.2% Hispanic or Latina, 6.0% American Indian or Alaska Native, .7% Asian, .5% Native Hawaiian or Other Pacific Islander, and .2% did not respond. Regarding highest attained education level, 35.5% of participants had a high school diploma or GED and 30.3% had less than a high school diploma. Nearly 55% percent of participants reported a monthly income of less than $600.

Regarding differences in demographic information between sample subgroups (i.e., unidirectional, bidirectional, and no physical assault reported), racial or ethnic group was the main difference in demographic information. Among those reporting unidirectional IPV, for instance, the largest percentages of participants were White (72%). This can be compared to those reporting bidirectional IPV, with the largest percentages of participants reporting Black race (46.6%). Regarding those reporting no IPV, the largest percentages of participants were White (42%) or Black (40%). It is also important to note that mean depression scores were highest for those reporting bidirectional IPV (M=21.5, SD=12.1), as compared to the unidirectional IPV group (M=18, SD=12.6), no IPV group (M=13.4, SD=10.5), and the whole sample (M=17.2, SD=11.8). Demographic information for each of these groups can be found in Table 1.

Hypothesis One

A chi-square test of independence was conducted to test the hypothesis that being an

initiator of IPV would not be independent of being a victim of IPV, with participants being more likely to serve as both a victim and an initiator than only a victim or only an initiator. Results of hypothesis one can be found in Table 2. This hypothesis was supported, as initiators and victims were not independent of one another (χ^2 (1, N = 267) = 112.3, $p < .001$, Cramér's effect size V = 0.65). Specifically, 44% of the current study sample reported both initiating and victimization of IPV (bidirectional IPV), 11% reported only victimization of IPV (unidirectional), 7% reported being an initiator only, and 38% reported that they were neither an initiator nor a victim of IPV.

Consistent with predictions, current findings revealed that 118 participants reported bidirectional IPV compared to only 28 participants who reported unidirectional IPV. While this significant difference in sample size is important for study implications, it is unclear if results for those reporting unidirectional IPV represent a true reflection of relations between variables. Because the large number of predictors in the regression model testing unidirectional IPV hypotheses necessitates more inferential tests, significantly more participants are needed in order to obtain reliable estimates of the correlations in each model. Therefore, all analyses conducted within the unidirectional IPV sample should be interpreted with caution due to the small sample size.

Hypothesis 2a

Hypotheses two and three were conducted on the subsample of individuals reporting unidirectional IPV, while hypotheses four and five were conducted on the subsample of individuals reporting bidirectional IPV. Correlational analyses between all IPV study variables, depression, and social support revealed that most variables were significantly correlated (See Table 3). This finding is likely due to the interrelatedness of these variables, with IPV type and manifestation (chronicity, severe, minor abuse) being significantly associated with one another.

A hierarchical multiple regression was conducted to determine the impact of IPV chronicity on depression for each type of abuse (physical, sexual, and psychological). Only participants reporting unidirectional physical assault (victims scale) were included in these

analyses. Hypothesis 2a results are provided in Table 4. The addition of abuse variables as measured by chronicity did not significantly contribute above and beyond the demographic variables, F (3, 17) = .832, p = .495. Specifically, neither physical assault (β = .212, p = .570), psychological aggression (β = -.536, p = .133), nor sexual coercion (β = .088, p = .806) as measured by chronicity significantly contributed beyond the demographic variables to predict depression.

Although severe and minor abuse variables were included in analyses testing hypothesis 2b, it should be noted that the small number of participants reporting unidirectional IPV makes interpretation of results difficult. The large number of predictors in the current model suggests that additional participants are needed in order to interpret the data more accurately.

Hypothesis 2b

Severe subscale. Two hierarchical multiple regressions were conducted to determine the impact of IPV severity on depression for each type of abuse. Only participants reporting unidirectional physical assault (victims scale) were included in these analyses. For the first regression model, physical assault, sexual coercion, and psychological aggression (severe subscale) were entered on step two. The addition of severe abuse variables did not significantly contribute above and beyond the baseline demographics model, F (3, 17) = .135, p = .938. Specifically, neither severe physical assault (β = .096, p = .826), severe psychological aggression (β = -.240, p = .573), nor severe sexual coercion (β = .100, p = .747) significantly contributed incrementally over the demographics to predict depression. These results can be found in Table 5.

Minor subscale. For the second regression model, physical assault, sexual coercion, and psychological aggression (minor subscale) were entered on step two. The addition of minor abuse variables did not significantly contribute above and beyond the baseline demographics model, F (3, 17) = .999, p = .417. Specifically, neither minor physical assault (β = -.236, p = .502), minor psychological aggression (β = -.495, p = .124), nor minor sexual coercion (β = .405, p = .342) significantly contributed to the regression model. It was proposed that any variables significantly

contributing to the regression models in hypothesis two would be included in a reduced, combined model testing hypothesis three. However, no variables reached significance in hypothesis two. Because minor psychological aggression was approaching significance at the 90% confidence level, it was included in analyses testing hypothesis three and served as the only variable included in the reduced model. These results are provided in Table 6 and should be interpreted with caution due to the small sample size.

Hypothesis Three

A hierarchical multiple regression was conducted to test the impact of social support on the relation between IPV type and depression. Similar to Hypotheses 2a and 2b, only participants reporting unidirectional physical assault (victims scale) were included in these analyses. Results of hypothesis three can be found in Table 7. Results from step one revealed that demographic variables on their own did not contribute significantly beyond the null model, F (4, 20) = .904, p = .480. Similarly, minor psychological aggression did not contribute significantly beyond the demographics, F (1, 19) = 2.157, p = .158. Model three indicated that social support (β = -.603, p = .002) contributed significantly above and beyond minor psychological aggression and demographics, F (1, 18) = 12.675, p = .002, and accounted for 31.4% of the overall variance in depression. The addition of the interaction between minor psychological aggression and social support (β = 3.764, p = .173) did not significantly improve the model, F (1, 17) = 2.028, p = .173. Thus, model three best fit the overall data because the interaction variable did not significantly contribute incrementally over the demographics, minor psychological aggression, or social support. It is unclear, however, if these results would be replicated with a larger sample size.

Hypothesis 4a

A hierarchical multiple regression was conducted to determine the impact of bidirectional IPV chronicity on depression for each type of abuse (physical, sexual, and psychological). Only participants reporting bidirectional physical assault (victim scale and perpetrator scale) were included in these analyses. As compared to the sample of individuals reporting unidirectional IPV

(N = 28), there was a larger group of participants reporting bidirectional IPV (N = 118). Hypothesis 4a results are provided in Table 8.

Results indicated that the addition of abuse chronicity variables did not contribute significantly compared to demographics alone, though it is approaching significance, F (6, 59) = 1.946, p = .088. As measured by victim chronicity scores, neither physical assault (β = .095, p = .556), nor psychological aggression (β = -.083, p = .707), nor sexual coercion (β = .273, p = .091) contributed significantly above and beyond demographic variables. Because sexual coercion chronicity (victim scale) was approaching significance at the 90% level, it was included in the reduced, combined model in hypothesis five. Similarly, as measured by perpetrator chronicity scores, neither physical assault (β = -.020, p = .884), nor psychological aggression (β = .265, p = 129), nor sexual coercion (β = .117, p = .342) contributed significantly beyond the baseline demographics model.

Results of an independent samples t-test assessing for significant group mean differences in depression among IPV groups (unidirectional physical IPV versus bidirectional physical IPV) suggest that on average, participants experienced greater depression when reporting bidirectional IPV (M = 21.51, SD = 12.12) than unidirectional IPV (M = 18.00, SD = 12.59). However, this difference was not significant t(139) = -1.30, p > .05.

Hypothesis 4b

Severe variables. Two hierarchical multiple regressions were conducted to determine the impact of IPV severity on depression for each type of abuse. Only participants reporting bidirectional physical assault (victims scale and perpetrator scale) were included in these analyses. These results are provided in Table 9. Analyses using listwise versus pairwise deletion methods resulted in contrasting findings, each of which are reported in this section. It is likely that the differences arising from each deletion method are due to noticeable patterns of missing data on the CTS2 among all participants. These missing data patterns were detected for all variables of interest from the CTS2 as compared to other measures assessing less sensitive topics

such as depression (BDI) and social support (SPS).

Pairwise deletion results. Results indicated that the addition of severe abuse variables significantly improved the model compared to demographics only, F (6, 58) = 3.319, p = .007. None of the severe abuse variables significantly contributed incrementally over the demographics at the 95% confidence level. However, severe sexual coercion as measured by the perpetrator scale was significantly associated with increased depression at the 90% confidence level (β = .215, p = .082). This variable was included in the reduced model testing hypothesis five. It is important to note that the perpetrator severe sexual coercion scale demonstrated negative reliability, with only four participants endorsing items on this scale. Thus, these results should be interpreted with caution.

Regarding variables from the victim scale, neither severe physical assault (β = .043, p = .808), nor severe psychological aggression (β = .091, p = .607), nor severe sexual coercion (β = .217, p = .119) were significant. Similarly, regarding variables from the perpetrator scale, neither severe physical assault (β = .173, p = .224) nor severe psychological aggression (β = .127, p = .344) contributed significantly to the overall model. Results of analyses using pairwise deletion methods differ from those using listwise deletion methods such that in the listwise deletion method, severe psychological aggression (perpetrator scale) significantly contributed to the overall model at the 90% confidence interval whereas it was not significant using the pairwise deletion method. However, it should be noted that no results from hypothesis four were significant at the 95% confidence level. These differential results are presented below.

Listwise deletion results. Similar to hypothesis 4b analyses using pairwise deletion methods, severe sexual coercion as measured by the perpetrator scale incrementally contributed to the overall model at the 90% confidence level (β = .199, p =.097). Severe psychological aggression as measured by the perpetrator scale also significantly contributed to the model at the 90% confidence level (β = .227, p = .080), though this was not the case using pairwise deletion

methods. This variable will be included in the reduced model for hypothesis five along with perpetrator severe sexual coercion.

Minor variables. Results from model one indicated that the contribution of minor abuse variables did not add incremental value compared to demographics on their own, F (6, 57) = 1.538, p = .183. Similarly, none of the minor abuse variables as measured by the victim or perpetrator scale were significant. Regarding the victim scale, neither minor physical assault (β = .085, p = .608), minor psychological aggression (β = -.147, p = .494), nor minor sexual coercion (β = .207, p = .205) were significant. For the perpetrator scale, a similar trend was observed for minor physical assault (β = .242, p =.133), minor psychological aggression (β = .094, p = .611), and minor sexual coercion (β = -.011, p = .933). These results are provided in Table 10.

Hypothesis Five

A hierarchical multiple regression was conducted to test the impact of social support on the relation between IPV type and depression. Similar to Hypotheses 4a and 4b, only participants reporting bidirectional physical assault (victims scale and perpetrator scale) were included in these analyses. The following variables were the only ones found to be significant in analyses testing hypothesis four: sexual coercion chronicity (victim scale), severe psychological aggression (perpetrator scale), and severe sexual coercion (perpetrator scale). Therefore, they were the only IPV variables included in the reduced, combined model for hypothesis five. Results of hypothesis five can be found in Table 11. Analyses using listwise versus pairwise deletion methods resulted in contrasting findings, each of which are reported in this section. Similar to prior observed differences using either listwise or pairwise deletion methods, it is likely that these differences are due to participants' refusal to answer some items on the CTS2.

Results revealed that the addition of severe sexual coercion (perpetrator), sexual coercion chronicity (victim), and severe psychological aggression (perpetrator) significantly improved the model compared to demographics alone, F (3, 61) = 5.233, p = .003, with the model explaining 21.9% of the total variance in depression. The addition of social support (β = -.332, p = .007) in

model three significantly improved the model, F (1, 60) = 7.883, p = .007, explaining 30.9% of the total variance in depression. The main effect of severe sexual coercion (perpetrator) on depression was significant (β = .240, p = .036), while the main effect of severe psychological aggression (perpetrator) was approaching significance at the 95% level (β = .221, p = .060).

While the addition of the interaction terms explained 36.5% of the total variance in depression, the contribution of these interactions was not significant at the 95% confidence level, F (2, 58) = 2.516, p = .090, making model three the best fit for the data. The addition of two of the interaction terms in model four were not significant: the interaction between sexual assault chronicity (victim) and social support (β = -.514, p = .582) and the interaction between severe psychological aggression (perpetrator) and social support (β = -.999, p = .181). However, the main effect of severe sexual coercion (perpetrator) on depression was significant (β = .255, p = .025), suggesting that initiating severe sexual coercion is associated with increased depression among those reporting bidirectional IPV. Results of analyses using pairwise deletion methods differ from those using listwise deletion methods such that in the listwise deletion method, the main effect of severe sexual coercion (perpetrator) on depression was not significant (β = .819 p = .240).

CHAPTER V

DISCUSSION

The current study sought to examine the influence of social support on the relation between varying types of intimate partner violence (physical, psychological, and sexual) and depression among caregivers with young children at risk for maltreatment. Further, these relations were investigated separately for caregivers who reported experiencing either unidirectional IPV (i.e., victims of physical IPV) or bidirectional IPV (both victims and initiators of physical IPV) within the past year. Given that research suggests that the majority of IPV cases consist of mutual violence between partners (i.e., bidirectional IPV), we investigated whether this was the case in our sample of caregivers with young children with significant risks. It was hypothesized that being an initiator of IPV would not be independent of being a victim of IPV such that participants would be more likely to report being both a victim and an initiator of violence. Results were consistent with this hypothesis, as the majority of participants reported experiencing bidirectional IPV as compared to unidirectional IPV (victim or initiator). Forty-four percent of participants reported bidirectional IPV compared to 11% reporting victimization, 7% reporting initiating, and 38% reporting no IPV in the last year. In addition to the similarity of these results with previous research (Anderson, 2002; Gray & Foshee, 1997; Palmetto et al., 2013; Whitaker et al., 2007), these findings speak to the elevated risk factors experienced by families in the current sample, with more participants reporting some IPV than no IPV.

The number of caregivers reporting some type of IPV (unidirectional or bidirectional) in the past year was significantly higher than the number of those reporting no abuse. Because the

study sample consisted of caregivers participating in home visitation services aimed at child maltreatment prevention, these results lend support to previous research findings that IPV is one of the main risk factors for child abuse and neglect (Duggan et al., 2004; Eckenrode et al., 2000). Additionally, given the high percentage of participants reporting IPV, it is likely that these behaviors are being modeled in the presence of their young children. This is problematic due to the fact that children who witness IPV are more likely to experience a variety of behavioral health difficulties including internalizing symptoms (de la Vega et al., 2013, 2013; Kernic et al., 2003; Reinherz et al., 2003), externalizing symptoms (Jouriles et al., 1989; Kernic et al., 2003; Zarling et al., 2013), and posttraumatic stress symptoms (Graham-Bermann & Levendosky, 1998; Kilpatrick & Williams, 1997; Lang & Stover, 2008) compared to children who did not witness IPV. Further, modeling these behaviors in the presence of children may suggest to children that physical violence is an appropriate method for handling conflict, particularly among caregivers reporting bidirectional IPV. These issues need to be considered in future research examining impacts of IPV on the family.

While the impacts of bidirectional IPV are often detrimental for the family, the dynamics of these violent interactions are unclear in the current study. Methods used to measure bidirectional IPV in this study were based on females' report of victimization and initiation of physical assault with a partner. Therefore, we are unable to determine reasons for initiation or victimization of violence such as self-protection strategies, use of coercion or threats, or inappropriate methods of handling conflict. Although these dynamics cannot be determined with these data, associations between unidirectional/bidirectional IPV and symptomology were examined to better understand the nature of IPV type with regard to individual functioning.

Previous research is mixed regarding which abuse type is associated with the highest rates of depression (e.g., Al-Modallal, 2012; Bonomi et al., 2007; Carbone-Lopez et al, 2006; Coker et al., 2005), with many of the studies examining these relations among victims of IPV only. Therefore in our study, it was hypothesized that among participants reporting unidirectional

IPV, each type of abuse (physical, sexual, and psychological) would be significantly positively associated with depression. Impacts of abuse chronicity and severe and minor abuse on depression were examined. Results did not support this hypothesis since none of the abuse variables significantly contributed to depression scores among participants reporting unidirectional IPV. However, the association between minor psychological aggression and depression was approaching significance, with those experiencing this type of abuse also reporting increased depression. These results were not consistent with the hypothesis that severe abuse would be associated with higher depression.

The participants in this sample endorsed unidirectional physical abuse, indicating that they reported victimization of at least one physical abuse act. Thus, among individuals reporting at least one physically abusive act toward them, those also experiencing minor physical abuse reported higher depression. While this relation was only approaching significance, it is consistent with previous research suggesting that psychological abuse in particular is associated with negative outcomes (Panuzio & DiLillo, 2010; Schumacher & Leonard, 2005), including increased depression (Sullivan et al., 2013).

In order to determine if any additional constructs impacted the relation between IPV types and depression among victims of abuse, the influence of victims' social support on depression was examined. Although no abuse types were found to be statistically significant for hypothesis two, the impact of social support on the relation between minor psychological aggression and depression was investigated. A breadth of research suggests that higher social support contributes to lower depression among IPV victims (Carlson et al., 2002; Beeble et al., 2009; Coker et al., 2002; Faisal-Cury et al., 2013; Mburia-Mwalili et al., 2010; Meadows et al., 2005). Therefore, it was predicted that higher social support would have a greater impact on depression levels among individuals experiencing more chronic and/or severe IPV. Results did not support this prediction. The interaction between social support and minor psychological aggression did not significantly contribute to depression levels among those reporting

unidirectional IPV. However, among victims of IPV, higher levels of social support were significantly associated with lower depression levels. This relation was not restricted to a particular abuse type. These findings are congruent with previous research highlighting the protective effects of social support for a variety of difficulties, particularly victimization of IPV.

It is important to note that inclusion criteria for the unidirectional and bidirectional IPV group include at least one act of physical assault victimization (unidirectional) or one act of victimization and initiation (bidirectional). This may have impacted findings such that individuals reporting other types of abuse (sexual or psychological) were not considered in these inclusion criteria. For instance, some participants may have reported bidirectional psychological abuse, but not bidirectional physical abuse, and their depression levels may vary depending on these different inclusion criteria. Future research should investigate whether these varying combinations of unidirectional and bidirectional IPV (i.e., physical, sexual, and/or psychological) reveal differential associations with depression, social support, or other related variables.

The current study revealed a greater understanding of the relation between IPV, social support, and depression among caregivers reporting differing types of mutual or one-sided abuse. This was done by comparing findings from those reporting unidirectional IPV to those reporting bidirectional IPV. It was hypothesized that each abuse type (physical, sexual, and psychological) would be significantly positively associated with depression among participants reporting bidirectional IPV. Specifically, it was predicted that among those reporting bidirectional IPV, higher chronicity scores would be associated with higher depression levels compared to those with lower chronicity scores, and those with severe and/or minor IPV would have higher depression levels.

Results did not support this hypothesis, as none of the abuse variables measured by chronicity or severity were statistically significant when predicting depression. However, three variables were significant at the 90% confidence level when predicting depression: sexual coercion chronicity (victims scale), severe sexual coercion (perpetrator scale), and severe

psychological aggression (perpetrator scale). Among participants reporting bidirectional IPV, those reporting each of these three types of abuse reported increased depression levels. Regarding the severe sexual coercion variable from the perpetrator scale, it is important to note that this scale demonstrated very low reliability with only four participants reporting initiation of severe sexual coercion. These outliers may also be contributing to differences in results using listwise versus pairwise deletion methods. Thus, while it is possible that initiating severe sexual coercion is associated with increased depression, this finding should be interpreted with caution just as all other results yielded from low sample sizes.

An additional noteworthy finding is that two of the three abuse variables that approached significance when predicting depression were from the perpetrator scale. This suggests that initiation of severe sexual coercion and severe psychological aggression is associated with increased depression, though this was not the case for victimization of these abuse types. A closer examination of item endorsement on these subscales suggests that the majority of participants reporting severe psychological aggression reported that they "Threatened to hit or throw something at [their] partner" most frequently. While it is unclear why participants engaged in each abusive act, this is an interesting finding nonetheless. It is possible that making this threat is a method of handling conflict during arguments. Because this finding was identified among the bidirectional IPV group, it may also be that these participants are reacting in self-defense to protect against other abusive acts initiated by their partners. Another possibility is that their increased depressive symptoms contribute to irrational/distorted thinking, thereby causing them to make impulsive threats as opposed to handling conflict via more constructive methods.

The finding that initiation of IPV led to higher rates of depression compared to victimization of IPV is consistent with studies revealing positive links between IPV initiation and depression (Feldbau-Kohn, Heyman, & O'Leary, 1998; Schumacher, Feldbau-Kohn, Smith Slep, & Heyman, 2001; Sugarman, Aldarondo, & Boney-McCoy, 1996). However, much of this research has focused on initiation of violence by males toward females. The current study's

female sample suggests that among females who report initiation and victimization of IPV, initiating severe abuse was associated with increased depression. Previous research has shown that depression was more strongly associated with IPV victimization for women and IPV initiation for men (Graham, Bernards, Flynn, Tremblay, & Wells, 2012). Additional research is warranted to determine if similar findings are observed among male and female caregivers of young children with imminent risks. Further, the current study's differential findings observed among those reporting unidirectional versus bidirectional IPV lends support for the idea that IPV is a dynamic construct that should be measured as such in research and acknowledged clinically.

The final aim of the study was to better understand the role of social support on depressive symptoms among individuals reporting bidirectional IPV. It was hypothesized that for these individuals, higher social support would have a greater impact on depression levels among individuals experiencing chronic and/or severe or minor IPV. This hypothesis was not supported by the results, as none of the interaction variables were statistically significant when predicting depression. However, the main effects of social support and severe sexual coercion (perpetrator scale) were significant, with more support predicting less depression and initiation of severe sexual coercion predicting higher depression. The addition of these main effects to the model explained 31% of the total variance in depression.

These findings highlight the important role of social support on depressive symptoms, particularly among individuals who are initiating and being victimized by IPV. This is particularly important for this subsample, as the mean depression score was highest for the bidirectional IPV group as compared to those reporting unidirectional IPV, no IPV, and everyone together. Thus, enhancing social support should be a focus for those in mutually violent relationships. While the significant impact of social support on depression in this sample has been established, it is important to acknowledge that the measure used to assess social support does not clarify who is providing such support. Therefore, the current study's findings indicate the

importance of social support on depression in general, though they do not provide information regarding the source of the support for these families.

It is important to note the significant main effect of initiation of severe sexual coercion on depression. Specifically, initiation of severe sexual coercion, not victimization, was associated with increased depression levels. It is possible that a certain amount of guilt and/or shame is associated with initiation of sexual abuse toward a partner. These negative feelings could in turn be related to higher depression levels. Conversely, perhaps participants who are depressed are more likely to initiate severe sexual abuse due to distorted cognitions and irrational thinking. This irrational thinking may contribute to more impulsive, unhealthy decisions such as sexual threats and use of force for sexual acts. However, due to the small number of participants reporting severe sexual coercion coupled with the low reliability of this scale, these analyses should be conducted among a larger sample of vulnerable caregivers to determine if results replicate.

Study Strengths

The present study addressed an important gap in the extant literature in a number of ways. Although many studies have investigated the impact of IPV on depression, fewer have examined the impact of abuse type on depression. Additionally, while researchers have begun examining bidirectional versus unidirectional IPV for some time, the number of studies specifically observing abuse type among individuals reporting unidirectional or bidirectional IPV is scarce. Our study made the imperative next step to address previous mixed findings, and to identify a potential moderator (i.e., social support) that impacts these relations. The present study also underscores the necessity to examine various types of abuse (physical, psychological, and sexual) among those experiencing mutual or one-sided IPV. It is clear that examining IPV as a static construct often does not capture the most accurate experience had by most individuals reporting abuse. This study addressed this need by assessing IPV by abuse type and victimization versus initiation of IPV.

Study Limitations

Despite the study's strengths, a number of limitations also exist. One major limitation of the present study is the sample size. Due to limiting participants to females with a partner within the past year, the sample size decreased from 562 to 118 for those reporting bidirectional IPV and 28 for those reporting unidirectional IPV. While the attenuation of the sample size for the current study is understandable given that it is part of a larger study with differing aims, findings using the unidirectional IPV group should be interpreted with caution. Due to the small sample size, it is unclear whether the lack of significant findings is due to there being no association between these study variables or due to insufficient statistical power. Future research should examine these relations with larger sample sizes and compare findings to those of the current study.

An additional limitation of the study is that data were collected from participants via self-report methods. Participants may have underreported the actual occurrence of their experiences due to the sensitive nature of the study's topics. Further, it is impossible to make assumptions about the dynamics of participants' violent interactions due to this method of gathering data. Future research should investigate reasons behind initiating violence among individuals reporting bidirectional IPV (e.g., self-defense strategies, coercion, terroristic acts, etc.).

Finally, while this study captures IPV in a unique sample of caregivers with young children at risk for adverse events, it is limited to female caregivers. Previous research has found significant differences regarding IPV prevalence, chronicity, severity, and their relations to depression when comparing males and females. While the present study did not incorporate data from male caregivers, future research could benefit from understanding these relations from male reporters.

Clinical Implications and Future Directions

A number of clinical implications can be drawn from the present study. Due to the significantly higher percentage of participants reporting bidirectional than unidirectional IPV, it is conceivable that these individuals struggle to handle conflict effectively with their romantic

partners. This unhealthy conflict resolution is then associated with negative mental health outcomes. While this assumption is possible, it is also possible, however, that those reporting bidirectional IPV are acting in self-defense and experiencing related, heightened depression symptoms. Regardless of the reason behind the violence and increased depression, these interactions often impact the entire family system, including children in the home. Interventions for caregivers experiencing similar events may benefit from modeling healthy methods of handling conflict with others in an effort to improve the family environment, as well as improved overall mental health.

Additionally, it is evident that a number of high risk factors such as IPV contribute to increased risk for child maltreatment. Some intervention programs aimed at preventing or reducing child maltreatment consist of home-based parenting services, each with varying targets and modules. Providers of such programs should be trained to identify and address risk factors most proximal to child abuse and neglect such as IPV and depression. A component of this training may be appropriately assessing for unidirectional versus bidirectional IPV, as our findings suggest that individuals experiencing either type often report different outcomes and impacts. Following accurate and timely identification of risk factors present within the family, connections to appropriate supports are warranted. Similar to the importance of thoroughly assessing IPV types, assessing for the type of support system (e.g., family members, friends, clergy, etc.) most beneficial to each individual is a key component to improvements.

Future research is warranted to better understand the types of support that are most beneficial for each type or category of IPV. This may be achieved by conducting qualitative interviews with caregivers to determine if certain abuse types are associated with better outcomes as a function of connections to certain supports (e.g., formal versus informal support). Similarly, qualitative interviews may glean more information to help explain our findings that initiating violence was associated with higher depression, though this was not the case for victimization of

some types of violence. It may be beneficial to incorporate quantitative measures of guilt and/or shame to understand if either of these constructs moderates these relations.

Further, while our study found that bidirectional IPV was more prevalent than unidirectional or no IPV, it was not able to ascertain why participants were more likely to engage in mutual violence. While it may be implied that this is due to difficulty handling conflict with one another, other possibilities such as acting in self-defense may exist. Future research could also benefit from assessing the potential mechanisms by which bidirectional IPV is occurring at higher rates.

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APPENDICES

Table 1. *Demographic characteristics of participants*

	All participants		Unidirectional IPV		Bidirectional IPV		No Physical IPV	
	N(%)	M(SD)	N(%)	M(SD)	N(%)	M(SD)	N(%)	M(SD)
Age	403	25.17 (5.96)	25	26.8(6.3)	116	24.8(5.5)	100	25.4(5.8)
Ethnicity								
Hispanic\Latina	45(11.2%)	--	0	--	13(11.2%)	--	10(10.%)	--
American Indian\Alaska Native	24(6.0%)	--	3(12%)	--	10(8.6%)	--	6(6%)	--
Asian	3(0.7%)	--	0	--	1(0.9%)	--	0	--
Native Hawaiian\ Other Pacific Islander	2 (0.5%)	--	1(4%)	--	1(0.9%)	--	0	--
Black	157 (39.0%)	--	3(12%)	--	54(46.6%)	--	40(40%)	--
White	170(42.2%)	--	18(72%)	--	37(31.9%)	--	42(42%)	--
Missing	1(0.2%)	--	0(0%)	--	0(0%)	--	1(1%)	--
Education								
< 9th grade - G.E.D or High School Diploma	265(65.8%)	--	19(76%)	--	82(70.7%)	--	60(60%)	--
Some College	92 (22.8%)	--	4(16%)	--	27(23.3%)	--	23(23%)	--
Vo-Tech	28 (6.9%)	--	2(8%)	--	5(4.3%)	--	11(11%)	--
Associates Degree	7 (1.7%)	--	0	--	1(0.9%)	--	0	--
Bachelors Degree	8 (2.0%)	--	0	--	1(0.9%)	--	3(3%)	--
Missing	3(0.7%)	--	0(0%)	--	0(0%)	--	3(3%)	--
Income								
Less than $300	138 (34.2%)	--	11(44%)	--	39(33.6%)	--	29(29%)	--
$300-$599	83 (20.6%)	--	5(20%)	--	28(24.1%)	--	21(21%)	--
$600-$2099	142 (35.3%)	--	7(28%)	--	42(36.2%)	--	37(37%)	--
$2100-$3349	16 (4.0%)	--	1(4%)	--	4(3.4%)	--	5(5%)	--
More than $3350	15 (3.7%)	--	1(4%)	--	2(1.7%)	--	4(4%)	--
Missing	9(2.2%)	--	0(0%)	--	1(0.9%)	--	4(4%)	--
BDI Score	402	17.2 (11.8)	25	18(12.6)	116	21.5(12.1)	99	13.4(10.5)
SPS Score	402	37.8 (5.6)	25	37(4.6)	115	36.6(5.6)	100	39.3(5.5)
Abuse Type								

Victim Physical	278	18.2(45.9)	25	20.8(35.6)	116	45.7(66.6)	--	--
Perpetrator Physical	276	5.3(17.3)	--	--	116	14.9(28.6)	--	--
Victim Psychological	342	34.3(45.3)	25	44.0(39.4)	116	63.4(54.4)	100	7.6(14.4)
Perpetrator Psychological	342	24.1(33.8)	25	17.4(19.3)	114	48.7(42.1)	100	5.8(10.0)
Victim Sexual	271	8.4(20.3)	25	13.8(29.2)	93	14.8(23.5)	100	1.6(6.7)
Perpetrator Sexual	239	1.7(7.0)	25	.04(0.2)	83	2.5(6.3)	100	1.3(8.2)

Table 2. *Summary of Chi Square Analyses for Unidirectional and Bidirectional IPV (n = 267)*

		Victim Physical Assault Prevalence				
		No	Yes	Total	χ^2	Cramér's effect size
Perpetrator Physical Assault Prevalence	No	102	28	130	**112.31****	V = .065
	Yes	19	118	137		
Total		121	146	267		

Note. * $p < .05$, ** $p < .01$

Table 3. *Correlations between IPV study variables, depression, and social support*

		Victim Prevalence			Victim Chronicity			Perpetrator Prevalence		
		Ph	P	S	Ph	P	S	Ph	P	S
Victim Prevalence	Ph	--								
	P	.43**	--							
	S	.52**	.35**	--						
Victim Chronicity	Ph	.88**	.35**	.55**	--					
	P	.59**	.79**	.51**	.64**	--				
	S	.44**	.28**	.92**	.57**	.51**	--			
Perpetrator Prevalence	Ph	.65**	.40**	.49**	.58**	.53**	.40**	--		
	P	.47**	.74**	.35**	.39**	.71**	.27**	.44**	--	
	S	.31**	.21**	.41**	.16*	.18**	.28**	.40**	.16*	--
Perpetrator Chronicity	Ph	.48**	.26**	.38**	.59**	.51**	.45**	.65**	.26**	.14*
	P	.55**	.67**	.40**	.55**	.83**	.36**	.57**	.85**	.16*
	S	.17*	.13	.27**	.12	.14*	.28**	.26**	.03	.94**
Victim Severe	Ph	.66**	.28**	.50**	.91**	.60**	.55**	.50**	.31**	.06
	P	.56**	.39**	.48**	.74**	.76**	.51**	.48**	.40**	.12
	S	.33**	.14*	.47**	.51**	.37**	.63**	.20**	.17*	.11
Victim Minor	Ph	.87**	.35**	.57**	.99**	.64**	.58**	.59**	.41**	.21**
	P	.60**	.78**	.50**	.62**	.98**	.49**	.51**	.73**	.18**
	S	.44**	.30**	.90**	.55**	.50**	.98**	.40**	.28**	.30**
Perpetrator Severe	Ph	.39**	.18**	.28**	.47**	.37**	.33**	.57**	.19**	.29**
	P	.53**	.34**	.43**	.55**	.58**	.40**	.67**	.40**	.37**
	S	.09	.06	.05	.10	.08	-.01	.16*	.07	.33**
Perpetrator Minor	Ph	.62**	.34**	.51**	.67**	.58**	.48**	.87**	.39**	.38**
	P	.56**	.67**	.42**	.53**	.82**	.35**	.57**	.84**	.19**
	S	.13*	.12	.28**	.08	.13	.31**	.23**	.01	.88**
	Depress	.26**	.20**	.21**	.33**	.35**	.26**	.27**	.18**	.14*
	SS	-.15**	-.04	-.13*	-.15*	-.12	-.18**	-.22**	.00	-.14*

		Victim Prevalence			Victim Chronicity			Perpetrator Prevalence			Perpetrator Chronicity			Victim Sev	
		Ph	P	S	Ph	P	S	Ph	P	S	Ph	P	S	Ph	P
Victim Prevalence	Ph	--													
	P	.43**	--												
	S	.52**	.35**	--											
Victim Chronicity	Ph	.88**	.35**	.55**	--										
	P	.59**	.79**	.51**	.64**	--									
	S	.44**	.28**	.92**	.57**	.51**	--								
Perpetrator Prevalence	Ph	.65**	.40**	.49**	.58**	.53**	.40**	--							
	P	.47**	.74**	.35**	.39**	.71**	.27**	.44**	--						
	S	.31**	.21**	.41**	.16*	.18**	.28**	.40**	.16*	--					
Perpetrator Chronicity	Ph	.48**	.26**	.38**	.59**	.51**	.45**	.65**	.26**	.14*	--				
	P	.55**	.67**	.40**	.55**	.83**	.36**	.57**	.85**	.16*	.49**	--			
	S	.17*	.13	.27**	.12	.14*	.28**	.26**	.03	.94**	.19**	.09	--		
Victim Severe	Ph	.66**	.28**	.50**	.91**	.60**	.55**	.50**	.31**	.06	.54**	.46**	.03	--	
	P	.56**	.39**	.48**	.74**	.76**	.51**	.48**	.40**	.12	.49**	.56**	.08	.75**	--
	S	.33**	.14*	.47**	.51**	.37**	.63**	.20**	.17*	.11	.24**	.19**	.03	.54**	.48
Victim Minor	Ph	.87**	.35**	.57**	.99**	.64**	.58**	.59**	.41**	.21**	.59**	.55**	.13	.86**	.73
	P	.60**	.78**	.50**	.62**	.98**	.49**	.51**	.73**	.18**	.50**	.84**	.12	.57**	.69
	S	.44**	.30**	.90**	.55**	.50**	.98**	.40**	.28**	.30**	.42**	.37**	.30**	.52**	.48
Perpetrator	Ph	.39**	.18**	.28**	.47**	.37**	.33**	.57**	.19**	.29**	.57**	.34**	.25**	.43**	.41

Severe	P	.53**	.34**	.43**	.55**	.58**	.40**	.67**	.40**	.37**	.63**	.66**	.26**	.49**	.58
	S	.09	.06	.05	.10	.08	-.01	.16*	.07	.33**	.09	.13	.32**	.06	.12
Perpetrator Minor	Ph	.62**	.34**	.51**	.67**	.58**	.48**	.87**	.39**	.38**	.79	.61**	.25**	.64**	.55
	P	.56**	.67**	.42**	.53**	.82**	.35**	.57**	.84**	.19**	.42**	.99**	.05	.46**	.55
	S	.13*	.12	.28**	.08	.13	.31**	.23**	.01	.88**	.17*	.06	.95**	.00	.06
	Depress	.26**	.20**	.21**	.33**	.35**	.26**	.27**	.18**	.14*	.26**	.31**	.09	.30**	.31
	SS	-.15**	-.04	-.13*	-.15*	-.12	-.18**	-.22**	.00	-.14*	-.16**	-.09	-.10	-.10	-.19

Table 4. *Summary of Hierarchical Regression Analyses for Unidirectional Chronicity IPV Predicting Depression (n = 25)*

		Model 1			**Model 2**	
R^2		.15			.26	
ΔR^2		.15			.11	
Variable	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**
Intercept	22.46	12.86	--(.10)	24.52	13.66	--(.09)
Age	-.50	.43	-.25(.26)	-.42	.46	-.21(.38)
Education	2.30	1.99	.27(.26)	4.08	2.34	.48(.10)
Income	2.95	2.12	.33(.18)	4.19	2.34	.47(.09)
Non-White Race	.15	6.06	.01(.98)	-3.67	7.50	-.13(.63)
Physical Assault Chronicity (Victim)				1.75	3.02	.21(.57)
Psychological Aggression Chronicity (Victim)				-4.08	2.58	-.54(.13)
Sexual Coercion Chronicity (Victim)				.46	1.83	.09(.81)

Table 5. *Summary of Hierarchical Regression Analyses for Unidirectional Severe IPV Predicting Depression (n = 25)*

		Model 1			**Model 2**	
R^2		.15			.17	
ΔR^2		.15			.02	
Variable	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**
Intercept	22.46	12.86	--(.10)	24.25	14.73	--(.12)
Age	-.50	.43	-.25(.26)	-.52	.2	-.26(.33)
Education	2.30	1.99	.27(.26)	2.64	2.26	.31(.26)
Income	2.95	2.12	.33(.18)	3.00	2.33	.34(.22)
Non-White Race	.15	6.06	.01(.98)	-1.33	7.49	-.05(.86)
Severe Physical Assault (Victim)				.60	2.70	.10(.83)
Severe Psychological Aggression (Victim)				-1.46	2.4	-.24(.57)
Severe Sexual Coercion (Victim)				.63	1.94	.10(.75)

Table 6. *Summary of Hierarchical Regression Analyses for Unidirectional Minor IPV Predicting Depression (n = 25)*

		Model 1			**Model 2**	
R^2		.15			.28	
ΔR^2		.15			.13	
Variable	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**
Intercept	22.46	12.86	--(.10)	28.38	13.43	--(.05)
Age	-.50	.43	-.25(.26)	-.39	.45	-.20(.39)
Education	2.30	1.99	.27(.26)	4.42	2.38	.52(.08)
Income	2.9	2.12	.33(.18)	3.61	2.26	.41(.13)
Non-White Race	.15	6.06	.01(.98)	-2.98	7.45	-.11(.69)
Minor Physical Assault (Victim)				-1.87	2.72	-.24(.50)
Minor Psychological Aggression (Victim)				-4.01	2.48	-.0(.12)
Minor Sexual Coercion (Victim)				2.28	2.33	.41(.34)

Table 7. *Summary of Hierarchical Regression Analyses for Social Support Predicting Depression for Unidirectional IPV (n = 25)*

	Model 1			**Model 2**			**Model 3**			**Model 4**		
R^2	.15			.24			.55			.60		
ΔR^2	.15			.09			.31			.05		
Variable	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**
Intercept	22.46	12.86	--(.10)	25.28	12.65	--(.06)	76.13	14.41	--(.00)	155.57	58.30	--(.02)
Age	-.50	.43	-.25(.26)	-.36	.43	-.18(.41)	-.05	.35	-.03(.88)	.11	.36	.06(.76)
Education	2.30	1.99	.27(.26)	3.43	2.08	.40(.12)	2.60	1.66	.30(.13)	2.21	1.63	.26(.19)
Income	2.9	2.12	.33(.18)	3.73	2.12	.42(.10)	3.09	1.68	.35(.08)	2.23	1.74	.25(.22)
Non-White Race	.15	6.06	.01(.98)	-5.07	6.88	-.19(.47)	-2.27	5.47	-.08(.68)	.35	5.63	.01(.95)
Minor Psychological Aggression (Victim)				-3.09	2.10	-.38(.16)	-1.71	1.70	-.21(.33)	-29.56	19.63	-3.65(.15)
Social Support							-1.65	.46	**-.60(.00)**	-3.96	1.69	**-1.45(.03)**
SS x Minor Psych (Victim)										.77	.54	3.76(.17)

Table 8. *Summary of Hierarchical Regression Analyses for Bidirectional Chronicity IPV Predicting Depression (n = 116)*

		Model 1			**Model 2**	
R^2		.02			.18	
ΔR^2		.02			.16	
Variable	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**
Intercept	20.69	7.56	--(.01)	13.01	9.31	--(.17)
Age	.19	.29	.08(.53)	.17	.29	.08(.56)
Education	-.40	1.08	-.05(.71)	-.13	1.08	-.02(.91)
Income	-1.20	1.28	-.13(.35)	-1.25	1.28	-.13(.34)
Non-White Race	-1.82	3.35	-.07(.59)	-2.50	3.41	-.10(.47)
Physical Assault Chronicity (Victim)				.68	1.15	.10(.56)
Psychological Aggression Chronicity (Victim)				-.73	1.93	-.08(.71)
Sexual Coercion Chronicity (Victim)				1.48	.86	.27(.09)
Physical Assault Chronicity (Perpetrator)				-.12	.83	-.02(.88)
Psychological Aggression Chronicity (Perpetrator)				2.39	1.5	.27(.13)
Sexual Coercion Chronicity (Perpetrator)				.85	.88	.12(.34)

Table 9. *Summary of Hierarchical Regression Analyses for Bidirectional Severe IPV Predicting Depression Using Pairwise Deletion Methods (n = 116)*

		Model 1			**Model 2**	
R^2		.02			.27	
ΔR^2		.02			.25	
Variable	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**
Intercept	20.69	7.62	--(.01)	23.45	8.17	--(.01)
Age	.19	.30	.08(.53)	.23	.28	.11(.42)
Education	-.41	1.09	-.05(.71)	-.31	1.02	-.04(.77)
Income	-1.20	1.29	-.13(.36)	-.33	1.22	-.03(.79)
Non-White Race	-1.82	3.38	-.07(.59)	-2.02	3.22	-.08(.3)
Severe Physical Assault (Victim)				.24	1.00	.04(.81)
Severe Psychological Aggression (Victim)				.49	.95	.09(.61)
Severe Sexual Coercion (Victim)				1.46	.92	.22(.12)
Severe Physical Assault (Perpetrator)				1.15	.94	.17(.22)
Severe Psychological Aggression (Perpetrator)				.81	.84	.13(.34)
Severe Sexual Coercion (Perpetrator)				3.52	1.99	.22(.08)

Table 9a. *Summary of Hierarchical Regression Analyses for Perpetrator Severe Psychological Aggression and Perpetrator Severe Sexual Coercion Predicting Depression Using Listwise Deletion Methods (n = 69)*

Variable (Model 2)	**B**	**SE B**	**β(p-value)**
Severe Psychological Aggression (Perpetrator)	1.63	.92	.23(.08)

Note. * $p < .05$, ** $p < .01$

Table 10. *Summary of Hierarchical Regression Analyses for Bidirectional Minor IPV Predicting Depression (n = 116)*

		Model 1			**Model 2**	
R^2		.02			.16	
ΔR^2		.02			.14	
Variable	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**
Intercept	20.69	7.68	--(.01)	16.84	9.39	--(.08)
Age	.19	.30	.08(.53)	.21	.30	.10(.49)
Education	-.40	1.10	-.05(.72)	-.16	1.12	-.02(.89)
Income	-1.20	1.30	-.13(.36)	-1.56	1.32	-.16(.24)
Non-White Race	-1.82	3.40	-.07(.59)	-3.77	3.65	-.15(.31)
Minor Physical Assault (Victim)				.65	1.25	.09(.61)
Minor Psychological Aggression (Victim)				-1.50	2.18	-.15(.49)
Minor Sexual Coercion (Victim)				1.16	.90	.21(.21)
Minor Physical Assault (Perpetrator)				1.98	1.30	.24(.13)
Minor Psychological Aggression (Perpetrator)				.90	1.77	.09(.61)
Minor Sexual Coercion (Perpetrator)				-.08	.98	-.01(.93)

Table 11. *Summary of Hierarchical Regression Analyses for Social Support Predicting Depression for Bidirectional IPV Using Pairwise Deletion Methods (n = 116)*

		Model 1			**Model 2**			**Model 3**			**Model 4**	
R^2		.02			.22			.31			.37	
ΔR^2		.02			.20			.09			.06	
Variable	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**	***B***	***SE B***	**β(p-value)**
Intercept	20.69	7.62	--(.01)	25.22	7.72	--(.00)	52.99	12.30	--(.00)	40.71	13.33	--(.00)
Age	.19	.30	.08(.3)	.17	.28	.07(.56)	.05	.27	.02(.85)	.02	.26	.01(.94)
Education	-.40	1.09	-.05(.71)	-.26	1.02	-.03(.80)	.25	.98	.03(.80)	.03	.99	.00(.98)
Income	-1.20	1.29	-.13(.36)	-.80	1.21	-.08(.51)	-.35	1.16	-.04(.76)	-.31	1.16	-.03(.79)
Non-White Race	-1.82	3.38	-.07(.59)	-3.01	3.14	-.12(.34)	-4.19	3.00	-.16(.17)	-3.23	2.97	-.13(.28)
Sexual Coercion Chronicity (Victim)				1.61	.68	**.30(.02)***	1.08	.67	.20(.11)	3.92	5.21	.72(.46)
Severe Psychological Aggression (Perpetrator)				1.27	.77	.20(.10)	1.40	.73	.22(.06)	7.49	4.70	1.18(.12)
Severe Sexual Coercion (Perpetrator)				4.38	1.93	**.27(.03)***	3.94	1.84	**.24(.04)***	4.17	1.82	**.26(.03)***
Social Support							-.72	.26	**-.33(.0**	-.37	.31	-.17(.2

									1)*			4)
SS x Sexual Chronicity (Victim)										-.08	.14	-.51(.58)
SS x Severe Psych (Perpetrator)										-.17	.13	-1.0(.18)
SS x Severe Sexual (Perpetrator)										--	--	--

Note. * $p < .05$, ** $p < .01$

VITA

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